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ABSTRACT

Presented are more than 284 summaries of environmental education programs being implemented within school systems and institutions of higher education. Programs are listed state-by-state. Each project or program contains information categorized under such entries as: (1) coordinator and address; (2) history of the project; (3) objectives; (4) materials; (5) implementation; (6) teacher preparation; and (7) summary of activities to date. Also included in the appendices are sections containing a copy of the questionnaire used to solicit project descriptions, and the names of state coordinators providing recommendations of projects included in the directory. (RE)

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ENVIRONMENTAL EDUCATION INFORMATION REPORTS

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A DIRECTORY OF PROJECTS AND PROGRAMS IN ENVIRONMENTAL EDUCATION

FIFTH EDITION

Compiled by
John F. Disinger
in cooperation with
State Environmental Education
Coordinators Association

ERIC Information Analysis Center for
Science, Mathematics, and Environmental Education
The Ohio State University
College of Education
and School of Natural Resources
1200 Chambers Road, 3rd Floor
Columbus, Ohio 43212

December 1979

SE 029 686

ENVIRONMENTAL EDUCATION INFORMATION REPORTS

Environmental Education Information Reports are issued to analyze and summarize information related to the teaching and learning of environmental education. It is hoped that these reviews will provice information for personnel involved in development, ideas for teachers, and indications of trends in environmental education.

Your comments and suggestions for this series are invited.

John F. Disinger
Associate Director
Environmental Education

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PREFACE

This is the fifth edition of ERIC SMEAC's Directory of Projects and Programs in Environmental Education for Elementary and Secondary Schools. As has been the case with all previous editions (1972, 1973, 1975, 1976), representatives of state education agencies were invited to recommend appropriate school-related environmental education activities for inclusion. There have been, however, several significant modifications in approach to the development of this edition.

The major modification has been the direct involvement of the State Environmental Education Coordinators Association (SEECA), formed in 1976 for the express purpose of developing and maintaining mutually supportive efforts among state education agency personnel carrying responsibility for environmental education. There are almost as many patterns of assignment of environmental education responsibility within such agencies as there are states. In most cases, "coordinators" for environmental education carry responsibility for other curricular areas or administrative functions (often, but not exclusively) in science education. They are variously listed as adviser, consultant, coordinator, director, manager, specialist, or supervisor. In many cases, "environmental education" is at least implicitly defined primarily as "outdoor education," "conservation education," "energy education," "marine education," or some such subset or combination of subsets, by the state education agency, the funding pattern, the coordinator, or historical precedent.

Members of the SEECA organization have worked cooperatively with ERIC/SMEAC in many ways during the 1970s, but the development of this edition of the Directory has been the first occasion where the opportunity for direct formal involvement has existed. SEECA members--and state coordinators not formally members of the organization--took the initiative in recommending contacts, in many cases assisted in securing reports, and provided input into questionnaire design and format. No project or program director lacking recommendation from a state coordinator was requested to submit a report, nor were any accepted without such recommendation.

Each state coordinator was asked to nominate ten "outstanding" school-related environmental education projects/programs from his/her home state. In all, 402 recommendations were received, from 49 of the 50 states. With 284 completed questionnaires received, a response of slightly more than 70 percent was achieved. The questionnaire sent to project/program directors is included as Appendix A; a list of those state coordinators providing recommendations is included as Appendix B. Officers and members of SEECA are listed on page iii.

Many documents prepared by various projects and programs which have been announced by the ERIC system are listed at the end of individual reports. Abstracts of such documents are printed in appropriate monthly issues of Resources in Education in serial order by ED number. The reader who wishes to investigate these documents is advised to locate and read the abstracts, available in libraries which subscribe to Resources in Education, then check the abstracts to determine if documents of interest are available in ERIC microfiche.

Documents available in microfiche may be located in 700 ERIC collections nationwide. For documents not available in microfiche, RIE abstracts make reference to other sources of availability.

Individuals who wish may order microfiche or paper copies of many documents, as indicated in the abstracts, through:

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Arlington, Virginia 22210

Of particular interest to ERIC/SMEAC is additional information relative to projects and programs reported herein, as well as information concerning other projects and programs which might have been reported. Because the primary mission of the ERIC system is the announcement of documents of interest to the educational community, copies of such documents are always welcomed by this office.

John F. Disinger
Compiler

December 1979

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A Directory of Projects and Programs
in Environmental Education
for Elementary and Secondary Schools

Fifth Edition

A. TITLE: DISCOVERY HALL PROJECT OF THE DAUPHIN ISLAND SEA LAB

B. DIRECTOR: John Booker
Marine Environmental Sciences Consortium
Dauphin Island Sea Lab -- P.O. Box 386
Dauphin Island, AL 36528
205/861-2141

C. DESCRIPTORS: Conservation Education, Environmental Education, Marine Education, Natural Resources, Outdoor Education

ADDITIONAL DESCRIPTORS: Public Environmental Awareness

D. HEADQUARTERS: Same as B.

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Marine and coastal habitat experiences.
Short courses available by arrangement.

E. PRINCIPAL STAFF: 4

CONSULTANT SERVICES UTILIZED: None

F. HISTORY:

1) Principal originators:
   Dr. George Crozier, Mr. Fred Rees, Mr. Tom Walker
2) Date and place of initiation:
   Summer, 1974, Dauphin Island Sea Lab
3) Funding sources utilized:
   State Education Appropriations (Alabama)
4) Overall purpose:
   To provide a hands-on awareness experience of coastal and marine environments in both formal and non-traditional educational modes for students and the public.

G. PROJECT OBJECTIVES:

1) To make available field experiences in coastal and marine environments as accompaniment to college and pre-college science classes.
2) To provide supplemental classroom instruction to college and pre-college science programs.
3) To promote public awareness of coastal and marine environments by providing tours, field experience, lectures and workshops to citizen's groups, scouts and other non-education organizations.
4) To provide professional assistance in marine-related curricula, materials development, project design and public programs.

H. MATERIALS:

1) Materials produced:
   Mimeograph marine coloring book
   Course and lecture outlines
   4-H Marine Handbook (with Alabama Sea Grant Advisory Services staff)
   Slide lecture on "Hurricanes"
   Field trip work sheets on oceanography and marine biology
2) Free materials available:
   Annual informational brochure
3) Materials purchasable: None listed
4) New instructional materials being developed:
   Yes, for grades 7 through 12
5) Materials anticipated for development:
   Field Trip Guide to Coastal Alabama
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: no response
2) Teachers adopting all of the materials: no response
3) Teachers using some of the materials: 5 - 15
4) Total students using all of the materials: 300
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Baker High School
Airport Blvd.
Mobile, Alabama

Davidson High School
3900 Pleasant Valley Rd.
Mobile, Alabama 36609

Murphy High School
100 S. Carlen
Mobile, Alabama 36606

Theodore High School
Theodore-Dawes Road
Theodore, Alabama 36582

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No
3) Pre-service training program: no response
4) Kinds of preparation programs:
   Workshop (one day)
   Summer Institute (1 to 5 weeks)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: none

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

High School Marine Biology Institute -- two four-week summer courses comprising a full-year's instruction.

Short Courses and Workshops -- length and content individually designed by Discovery Hall staff and sponsoring teachers or organization. Primarily directed toward the needs of eighth through twelfth grade science curricula or special interest organizations.

College Field Trips -- field experience in the marine and coastal environments as a supplement to non-marine courses taught on a college campus. Arranged by request.

Public Environmental Awareness -- non-structured basic field experience in marine and coastal habitats, usually one to three hours in length. Ideal for elementary grades, citizen's groups, scouts, and other non-educational organizations. A "get-your-feet-wet-and-muddy" approach. By arrangement.

Classroom visits -- lectures and laboratory exercises on selected topics conducted in the classroom (7-12) as a supplement to courses in Life Science, Earth Science and Marine Science. By appointment, for schools in the state of Alabama only.

Marine 4-H -- leader workshops, summer conference and special programs conducted in cooperation with marine advisory services (Mississippi-Alabama Sea Grant).

M. PLANS FOR THE FUTURE:

Further development of teacher training programs in cooperation with various universities and local school systems.

Expansion of materials available, especially on the primary level.

N. REPORT SUBMITTED BY: Dr. Judy Stout
Administrative Supervisor
November 14, 1979

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A. TITLE: ENVIRONMENTAL EDUCATION PROGRAM
HUNTSVILLE CITY SCHOOLS

B. DIRECTOR: Mrs. Mary Anne Terry
Project LIFE (Learning Input From Environment)
P.O. Box 1256
Huntsville City Schools
Huntsville, AL 35807
205/539-2557

C. DESCRIPTORS: Conservation Education, Energy Education, Environmental Education, Natural Resources, Outdoor Education, Population Education, Urban Environmental Education

ADDITIONAL DESCRIPTORS: Cultural Environment, Futuristics Environmental Citizenship

D. HEADQUARTERS: Monte Sano Environmental Center
1107 Monte Sano Blvd.
Huntsville, AL 35801
205/539-2557

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Three room facility in school on Monte Sano, adjoining outdoor laboratories; daily outdoor classes scheduled for two classes at selected sites in the area.

E. PRINCIPAL STAFF: 3

One director/teacher; two environmental resource teachers

CONSULTANT SERVICES UTILIZED: Yes; Advisory committee of local educators, scientists, foresters, etc. Environmental Education Staff aided in planning project and as presenters at some workshops. Consultants from out-of-state environmental education programs at workshops. Visited many environmental education projects.

F. HISTORY:

1) Principal originators:
Dr. Don T. Tubbs, Assistant Superintendent for Instruction
Mrs. Mary Anne Terry, graduate student in 1977 working on a community education project and volunteering for the assignment of preparing a feasibility study on an environmental education program for the city school system.

2) Date and place of initiation:
1977, Huntsville, Alabama; 1978, Board funded pilot project, Mrs. Terry was hired and project began in the spring atop Monte Sano in city and state parks.

3) Funding sources utilized:
Local funding from school system; two Office of Environmental Education grants; local group and agency support in kind; over 3,600 volunteer hours in one year; miscellaneous donations of materials, supplies, etc.

4) Overall purpose:
To train teachers and develop materials to be infused into the curriculum in grades 4 through 8 the first year and grades 9 through 12 the second year, to meet the following goals:

Awareness of the systems of man and nature; active participation in projects/studies that will teach resource management and provide opportunity for value judgments with a futuristic focus.

A demonstration model/training activity testing program with two classes per day operates in conjunction with the teacher training/materials development.

G. OBJECTIVES

1) Materials development/teacher training, in tandem with
2) Ongoing project of student environmental education in special areas to further the goal of all teachers in all subjects teaching environmental caring to bring about individual and group responsible action/decisions.

H. MATERIALS:

1) Materials produced:
The Monte Sano Environmental Experience -- A Teacher's Interdisciplinary Curriculum Activity Guide
Monte Sano Wildflowers
Monte Sano Fossils (Grades 4 through 8)
Earthart (Grades 1 through 12)
Slope Development and Flood Plains -- a slide presentation developed by volunteer support personnel (not available for duplication at this time).

2) Free materials available: None

3) Materials purchasable:
Available for printing cost plus mailing:
The Monte Sano Environmental Experience ($7.00 +)
Monte Sano Wildflowers ($2.00 +)
Monte Sano Fossils ($.75 +)
Earthart (to be printed in 1980)
Contact the Huntsville City Schools.

4) New instructional materials being developed:
"Project L.I.F.E. Activity Guide" for grades 9 through 12, to be available in the autumn of 1980.

5) Materials anticipated for development:
An environmental activity guide for teachers of the gifted and talented, for grades K through 3 and for adults. Also, materials dealing with Indian heritage.

6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 30
2) Teachers adopting all of the materials: no response
3) Teachers using some of the materials: 200
4) Total students using all of the materials: 7,000
5) Totals stated are estimated, based on the staff working with 7,900 during the 1978-79 year. All had materials selected by grade and interest, etc., and therefore did not use all of the materials available.
6) Selected schools where the program materials are being used:

Weatherly Heights Elementary School
1307 Canstatt Drive
Huntsville, AL 35802

Jones Valley School
4908 Garth Road
Huntsville, AL 35802

Chapman Elementary School
2006 Reuben Drive
Huntsville, AL 35811

Westlawn Middle School
4217 Ninth Avenue
Huntsville, AL 35805

Materials being used by some, not all, teachers in above schools.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
Workshop (series up to ten days; teachers may take all or part of the series)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
The Monte Sano Environmental Experience, plus sample information and preparation packet sent to principals and teachers.

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Teachers, students and consultants; materials written tested, re-tested and refined before printing.
2) Pertinent published research on evaluation: None
3) Unpublished research summary:
   Individual evaluation forms which were tallied in the final report to the Office of Environmental Education.

L. SUMMARY OF ACTIVITIES TO DATE:

Ten teacher workshops for lead teachers in levels 4 through 8, 1978-1979.

Materials development -- interdisciplinary activities on local environmental interests and issues keyed to science and social studies topics, by grade level, with math and language arts skills as well as art and music appreciation applied to the experiences; printed The Monte Sano Environmental Experience.

Student involvement -- over 7,900 students, plus 300 teachers and 850 adult volunteers took part in one or more days of environmental activities

Daily program of experiences for upper elementary/middle school classes during four months of the school year. This project is open for visitation by college students and educators and is funded locally.

M. PLANS FOR THE FUTURE:

Six to eight teacher workshops for lead teachers in levels 9 through 12, 1979-1980 Project L.I.F.E. Participants will develop and test materials for infusion in next year's curriculum. Limited field experiences directed by staff. More activities directed by teacher partcipants with staff assisting and observing.

Adult Education -- through community education, individual sessions and series on environmental topics.

Teacher training and materials development for gifted and talented, and for levels K through 3.

N. REPORT SUBMITTED BY: Mary Anne Terry
Director
November 5, 1979

A. TITLE: MOBILE COUNTY PUBLIC SCHOOLS ENVIRONMENTAL STUDIES CENTER

B. CURATOR:
David L. Scott
Environmental Studies Center
P.O. Box 1327
Mobile, AL 36601
205/661-0998

C. DESCRIPTORS: Conservation Education, Energy Education, Environmental Education, Marine Education, Natural Resources, Outdoor Education

ADDITIONAL DESCRIPTORS: Ecology, Teacher Training

D. HEADQUARTERS: Same as B.

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Outdoor and indoor exhibits, nature trails, live animal colony.

E. PRINCIPAL STAFF: 4

CONSULTANT SERVICES UTILIZED: Consultant services were utilized in planning the physical facilities and the instructional program.

F. HISTORY:

1) Principal originators:
   Mobile County School Board
2) Date and Place of initiation:
   1974, Mobile, Alabama
3) Funding sources utilized:
   Title III Funds and local school district funds
4) Overall purpose:
   To create through experiential learning an environmentally literate citizenry capable of making rational decisions regarding the care and future treatment of our world ecosystem.

G. OBJECTIVES:

1) To create an awareness of our world's environmental problems and stimulate creative thinking regarding their resolution.
2) To foster new attitudes and values necessary for man to live harmoniously with nature.

3) To instill within the student a sense of oneness with the natural ecosystem and an understanding of the interdependence of living things on one another.
4) To enrich, vitalize and complement content areas of the school curriculum by means of first-hand observation and direct experience outside the classroom.

H. MATERIALS:

1) Materials produced:
   Secondary (7-12) --
   "Finding Solutions to Environmental Problems" 14 pages
   "A Composite of Energy Curriculum Guides and Enrichment Materials" 11 pages
   Educator --
   "A Teacher's Guidebook to Multidisciplinary Environmental Education, Vol. I (K-5), Vol. II (6-8), Vol. III (9-12)" 1064 pages
2) Free materials available:
   "Finding Solutions to Environmental Problems"
   "A Composite of Energy Guides and Curriculum Materials"
   "A Guide to Campus Improvement and Beautification"
3) Materials purchasable: None
4) New instructional materials being developed:
   Yes, for grades K through 12
5) Materials anticipated for development:
   Multimedia catalog of Environmental Studies Materials for Mobile County teachers (from Environmental Studies Center collection).
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 84
2) Teachers adopting all of the materials: N/A
3) Teachers using some of the materials: 1,500
4) Total students using all of the materials: N/A
5) Totals stated are estimated.
   All materials (see section H) are resource materials which have been produced for discretionary use by teachers in the Mobile County Public School System. The totals for materials implementation are therefore based on materials distribution and not actual use.
6) Selected schools where the program materials are being used:

Grand Bay Elementary
P.O. Box 276
Grand Bay, AL 36541

Westlawn Elm. School
3071 Ralston Road
Mobile, AL 36606

Azalea Road Middle School
3800 Pleasant Valley Road
Mobile, AL 36609

Baker High School
Route 5 - Box 87
Mobile, AL 36608

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (generally one day)
   Summer Institute (varies depending on area emphasis)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Classroom Pilot Teachers
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

Since its beginning in 1974, the Environmental Studies Program has addressed a wide range of activities directed toward broadening the environmental education base in the Mobile County Public Schools and the community at large. The following list summarizes these activities and represents the current range of services now available through the Environmental Studies Center for teachers, students and the general public.

Development and system-wide use of the 640 acre outdoor classroom for outdoor education, including:

- -- interpreter-led activities designed to complement the natural sciences courses of study, K - 12;
- -- self-guided programs in natural history for school and community groups;
- -- live animal demonstrations emphasizing local wildlife;
- -- demonstration programs in forestry and wood resource management;
- -- opportunities for independent studies in natural science by advanced students; and,
- -- resources for locally organized school programs in canoeing, fishing, backpacking, orienteering, and wilderness survival.

Promotion of environmental education through workshops, in-service meetings, P.T.A. meetings, community organizations, and the news media.

Development of a resource library of environmental literature and teaching aids for use by interested teachers and students.

Making available professional staff members to assist teachers and principals in planning and executing a wide variety of classroom and campus-wide environmental education projects.

Development of curriculum materials in environmental education for local classroom use (materials identified in section H).

Preparation of grant proposals for submission to various outside funding sources to improve the overall environmental education effort.

M. PLANS FOR THE FUTURE:

Programs in outdoor and environmental studies tailored to the needs of handicapped students.

An independent studies program in environmental sciences for secondary students.

A classroom visitation program in marine awareness education for secondary students (to start in the autumn of 1979).

N. REPORT SUBMITTED BY: David L. Scott
Curator
November 21, 1979

Previous Directory References: 1975, 1976

ERIC Documents:

ED 115 499	A Guide to Campus Improvement and Beautification
ED 134 445	A Composite of Energy Curriculum Guides and Enrichment Materials
ED 135 650	Finding Solutions to Environmental Problems: A Process Guide

A. TITLE: ENVIRONMENTAL AND ENERGY EDUCATION CENTER

B. DIRECTOR: Ms. Jenetta Keller
University of Montevallo
Station #83
Montevallo, AL 35115
205/665-2521

C. DESCRIPTORS: Conservation Education, Energy Education, Environmental Education, Natural Resources, Outdoor Education, Population Education, Urban Environmental Education

ADDITIONAL DESCRIPTORS: None indicated

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: None

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED: Consultant services were used in the initial stages of development.

F. HISTORY:

1) Principal originators:
   Alabama Consortium for the Development of Higher Education Environmental Committee
2) Date and place of initiation:
   Fall, 1976, University of Montevallo
3) Funding sources utilized:
   Department of Health, Education and Welfare, 1976
   University of Montevallo, 1977-78, 1978-79, 1979-80
4) Overall purpose:
   To emphasize the importance of environmental and energy education through model conservation plans, prepared instructional materials, outdoor education and community education programs.

G. OBJECTIVES

1) To reduce energy consumed for heating, cooling, lighting and other building services
2) To use the lowest cost available fuel
3) To meet these objectives within the financial capability of the institution
4) To assess the need for instructional materials for on-campus classes
5) To increase community awareness through the use of materials

6) To cooperate with other state and community education agencies to produce and utilize materials.
7) To develop, collect, disseminate, and present curriculum materials for utilization in public school classrooms
8) To employ consultants to develop needed materials
9) To seek additional funding sources
10) To establish an outdoor education center and laboratory
11) To offer annual outdoor workshops for teachers and students
12) To offer an outdoor education curriculum
13) To work with Brierfield Ironworks Park and the Cahaba River Commission providing resource materials
14) To make presentations to civic and school groups
15) To conduct programs on environmental and energy topics that are open to the public
16) To provide conservation tips to the public through the media
17) To make an inventory of all environmental resources in the community, publish the material and distribute among the citizens
18) To serve as a clearinghouse for citizens to call or write for information on various environmental projects and problems
19) To organize a coordinating board of civic groups and individuals to direct community action on local environmental problems.

H. MATERIALS

1) Materials produced:
   Secondary (7-12) -- Slide/tape instructional units on Alabama's environment: The Cahaba River, Alabama Forests, Solar Energy, Surface Mining in Alabama
2) Free materials available:
   Slide/tape units are available on a free-loan basis. Filmstrips are also on loan: "Energy: The Problems and the Future," "The Problem with Water is People," and "Recycling Our Resources."
3) Materials purchasable: None indicated
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs: None

5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION:

1) Evaluator(s):
    Dr. Alvis Harthern, professor in the College of Education, University of Montevallo
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

Personnel of the Environmental and Energy Education Center have presented approximately 68 programs on energy and the environment since November 1977. These programs were presented to elementary, junior high and high school, and college groups as well as to civic, church and professional organizations.

The Center has also sponsored workshops and symposiums on energy and the environment. These have included: "Alabama's Natural Resources," coordination of Sun Day, a program emphasizing solar energy, on May 3, 1978 and 1979, coordination of two energy programs ("Current Energy Situation" and "Solar Energy"), an Outdoor Education Workshop and participation in a Heritage Preservation Conference held locally. The Center also serves as consultant to the Cahaba River Commission.

The University of Montevallo initiated an energy conservation program in January, 1978, which resulted in a decrease of electrical consumption by 14% and a decrease of gas and coal consumption by 4.4% comparing 1978 to 1979. Costs were reduced by $46,000 by reducing electrical consumption 1,329,600 kwh in 1978.

Instructional units were developed by members of the Alabama Consortium for the Development of Higher Education Environmental Committee and are housed at the University of Montevallo. These units focus on Alabama's environment.

An environmental education course was developed in 1976 and is taught every semester to education majors. An outdoor education course entitled "Creativity in the Out-of-doors" was developed in 1967 and continues to be popular with elementary education master degree candidates.

Compiled and distributed energy conservation tips for public service announcements on local radio stations.

Taped ten energy programs for a Birmingham, Alabama, television station for elementary school children.

M. PLANS FOR THE FUTURE:

Additional activities are planned. The nature of these is undecided at the present time. Funding sources need to be secured in order to make more definite plans.

N. REPORT SUBMITTED BY: Lolly Argo
Assistant to the Director
September 12, 1979

Previous Directory References: 1973, 1975, 1976

A. TITLE: BEAR CREEK ENVIRONMENTAL EDUCATION CENTER

B. ADMINISTRATOR: Allan M. O'Neal, Jr.
Bear Creek Watershed Environmental
Education Project
P.O. Box 880
Russellville, AL 35653
205/332-6200

C. DESCRIPTORS: Energy Education, Outdoor Education, Environmental Education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 1, parttime staff member

CONSULTANT SERVICES UTILIZED:
Tennessee Valley Authority

F. HISTORY:

1) Principal originators:
   Tennessee Valley Authority, Bear Creek Development Authority and Bear Creek Watershed Association
2) Date and place of initiation:
   March, 1972
3) Funding sources utilized:
   Tennessee Valley Authority, nine school systems, two grants from US Office of Environmental Education and four Youth Conservation Corps grants.
4) Overall purpose:
   Environmental education

G. OBJECTIVES

1) To create a more intensive awareness among students, teachers, and/or adults of the need for improving our environment;
2) To inspire teachers to use the out-of-doors as a teaching technique in all subject areas -- math, language arts, social studies, art science, etc. (Practical application).
3) To obtain a better educated citizenry through regional and local informal and formal environmental and energy education programs.

H. MATERIALS:

1) Materials produced:
   Secondary (7-12) -- Environmental Education Curriculum Guide
2) Free materials available: none indicated
3) Materials purchasable:
   Environmental Education Curriculum Guide, $7.50
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: no response
2) Teachers adopting all of the materials: no response
3) Teachers using some of the materials: no response
4) Total students using all of the materials: 20,000
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

College Avenue School
Russellville, AL 35653

R. E. Thompson School
Tuscumbia, AL 35674

L. E. Wilson School
Sheffield, AL 35660

Highland Park School
Muscle Shoals, AL 35660

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (10 days), Summer Institute (10 days)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: No

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Taught a teacher graduate course through University of Northern Alabama.

Involved teachers in on campus and off campus environmental education.

M. PLANS FOR THE FUTURE: Additional activities are planned.

N. REPORT SUBMITTED BY:

Allan M. O'Neal, Jr.
Administrator
October 5, 1979

Previous Directory Reference: 1973

ERIC Documents:

ED 077 695 Teachers Workshop in Environmental Education

ED 175 722 Environmental Education Curriculum Materials (7-12)

A. TITLE: SAND POINT JOHNSON O'MALLEY AQUACULTURE PROGRAM

B. PROGRAM DIRECTOR: Mr. Fred Kent
Sand Point City School District
P.O. Box 132
Sand Point, AK 99661
907/383-2393

C. DESCRIPTORS: Marine Education, Natural Resources, Outdoor Education.

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Hatchery building and grounds

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED: Alaska Fish and Game, F.R.E.D. Division, Private Non-profit hatchery program.

F. HISTORY:

1) Principal originators:
   George Kimball, principal; Gerry Rowan, aquaculturist; Johnson O'Malley Parent Committee
2) Date and place of initiation:
   October, 1975
3) Funding sources utilized:
   Funding through the Johnson O'Malley project division of the Bureau of Indian Affairs of the state of Alaska
4) Overall purpose:
   To enhance the development of the natural resources upon which the community is dependent.

G. OBJECTIVES

To educate students in the management and conservation of area resources, principally marine commercial species.

H. MATERIALS: None

I. IMPLEMENTATION:

136 students are involved in the program; see summary.

J. TEACHER PREPARATION: None

K. MATERIALS EVALUATION:

1) Evaluator(s):
   aquaculturist
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

Classroom and vocational experience curriulum with hands-on activities at the hatchery site, on field trips and specimen collecting.

Principle activity to date has been mitigation and propagation of indigenous salmon species along with construction and management of educational level fish hatchery.

M. PLANS FOR THE FUTURE:

Expansion of hatchery to self-supporting status and increase of scope of specimen collecting and applied research.

N. REPORT SUBMITTED BY:

Michael J. Breitzman
Aquaculturist
November 16, 1979

A. TITLE: OUTDOOR EDUCATION II, ENVIRONMENTAL EDUCATION, OUTDOOR STUDIES

B. DIRECTOR: Richard Forshier
Shadow Mountain High School
2902 East Shea Blvd.
Phoenix, AZ 85028
602/997-9346 or 866-1138

C. DESCRIPTORS: Conservation education, environmental education, marine education, natural resources, outdoor education, population education, urban environmental education.

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Outdoor study area adjacent to the school; slide show

E. PRINCIPAL STAFF: 1

F. HISTORY:

1) Principal originators:
Richard Forshier
2) Date and place of initiation:
June, 1979
3) Funding sources utilized:
None; students pay all expenses to take this class
4) Overall purpose:
To use interdisciplinary studies (all sciences, history, literature, arts) to study areas in the desert, mountains, and ocean environments.

G. OBJECTIVES:

Upon completion of the course work for Outdoor Education II, when asked to respond either orally or on a written test, the student will be able to:

Backpacking and hiking:

1) Discuss the problem of choosing proper equipment for the desert environment, the mountain environment, and the seashore environment.
2) Describe the skills necessary to survive conditions found in the desert environment, the mountain environment and the seashore environment.

Desert study techniques:

1) Conduct surveys of line-intercept vegetation studies.

2) Identify desert trees, shrubs, wildflowers, and cacti using the books: Cacti, Field Guide to Pacific State Wildflowers, Field Guide to Rocky Mountain Wildflowers, Field Guide to Southwestern Trees and Shrubs.
3) Conduct a square meter test on a site and identify the organisms within a 4" deep soil sample using: Field Guide to Insects and Field Guide to Desert Invertebrates.
4) Correctly use insect sweep net and insect buirets to collect specimens.
5) Identify desert vertebrates by using the reference books: Field Guide to Amphibians and Reptiles, Field Guide to Mammals, and Field Guide to Birds.
6) Recognize geologic rock types present in desert environments using the book: Field Guide to Rocks and Minerals.
7) Use a map and follow it to a designated position.
8) Use a compass to find locations, and be able to read it and follow a compass course.
9) Describe the physiologic adaptations of plants and animals of the desert environment.

Planning Flagstaff trip:

1) List the items necessary for a week's camping in a mountain environment including food, clothing, and shelter items.
2) Locate certain places on geological survey maps of the area.
3) Set-up and tear-down a campsite with a minimum impact on the environment.
4) Plan, prepare, cook, and clean-up fresh, frozen, canned and freeze-dried (dehydrated) food types.
5) Pack and unpack equipment in the school van used for transportation.

Plan San Diego trip:

1) List the items necessary for a week's camping at the seashore environment including food, clothing, and shelter items.
2) Locate certain places on geological survey maps of the area.

Other trips and activities:

1) Display similar knowledge and familiarity with the ecosystems of the Superstition Mountains, Flagstaff area, Oak Creek Canyon, Mormon Lake, and the Algodones.
2) Plan, complete and present a project to the class by using advanced reference books in the areas of zoology, botany, entomology, oceanography, geology, history, paleontology and ecology.

H. MATERIALS:

1) Materials produced:
   Secondary (7-12) -- Written paper to describe the process of developing an outdoor area; slide presentation to show students working at various activities. Many work sheets to use on the study locations and objectives for all activities.
2) Free materials available: None
3) Materials purchasable:
   All purchasable from the project director.
4) New instructional materials being developed: None
5) Materials anticipated for development:
   More study technique sheets, data charts, evaluation instruments
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 1
2) Teachers adopting all of the materials: 1
3) Teachers using some of the materials: many
4) Total students using all of the materials: 40
5) Totals stated are definite.

J. TEACHER PREPARATION:

No teacher preparation is currently necessary, but could be arranged if needed. Workshops of three plus hours would be utilized.

All materials available could be used by educators to prepare in-service or pre-service teachers.

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

1) Field trips, both local and extended.
2) Development of outdoor patio on school site.
3) Curriculum development.

M. PLANS FOR THE FUTURE:

Similar activities with activities for on-site use at more areas.

N. REPORT SUBMITTED BY: Richard Forshier
November 28, 1979

A. TITLE: ECOLOGY AND FIELD BIOLOGY/DESERT BIOLOGY

B. DIRECTOR: Dean J. Holland
Chairman, Science Departmant
Yuma High School
400 6th Avenue
Yuma, AZ 85364
602/782-1881

C. DESCRIPTORS: Conservation Education, Energy Education, Environmental Education, Outdoor Education, Population Education

ADDITIONAL DESCRIPTORS: Basic Ecology, Desert Biology

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

F. HISTORY:

1) Principal originators:
   Dean J. Holland
2) Date and place of initiation:
   September, 1971; Yuma High School
3) Funding sources utilized:
   Yuma High School Science Department budget
4) Overall purpose:
   To offer a second year of science for those students who want to develop a broader science background prior to entering college.

G. OBJECTIVES:

To provide a course offering in the ecology/environmental sciences realm through which students can increase their knowledge of the workings of the ecosystem in general, and broaden their understanding of the desert areas of the world in general, and the deserts of North America in particular.

H. MATERIALS:

1) Materials produced:
   Secondary (7-12) -- A few laboratory/field exercises; tests that accompany the material covered in the two courses.
2) Free materials available:
   Course outlines
3) Materials purchasable: None
4) New instructional materials being developed:
   Yes, for secondary grade levels.

5) Materials anticipated for development:
   Laboratory and field exercises; slide/tape narrations
6) Commercial association: None

I. IMPLEMENTATION

1) Schools using entire set of materials: 1
2) Teachers adopting all of the materials: 1
3) Teachers using some of the materials: unknown
4) Total students using all of the materials: 50
5) Totals stated are definite.

J. TEACHER PREPARATION: None

K. MATERIALS EVALUATION: Staff

L. SUMMARY OF ACTIVITIES TO DATE:

The program basically consists of two one semester courses put together by Mr. Holland to broaden the curriculum of the science department. The courses have been rather well accepted in that the average of two to three classes per year involves 20 to 25 students per class. These students must have had first year biology before enrolling in these two courses.

The Ecology and Field Biology course is taught in the fall semester and is a basic general ecology course with a strong emphasis on the development of an awareness of the ecosystem concept and man's role and position in this ecosystem.

The Desert Biology course is offered in the spring semester as a follow-up course where the students have the opportunity to apply some of the basic concepts learned during the first sememster, to a specific ecosystem.

M. PLANS FOR THE FUTURE:

Development of more field activities aimed at developing techniques for carrying out extended field/environmental investigations.

N. REPORT SUBMITTED BY: Dean J. Holland

Chairman, Science Department
November 15, 1979

A. TITLE: BRYANT ENVIRONMENTAL EDUCATION PROJECT

B. COORDINATOR: Alan Peek
Bryant Public Schools
Drawer AB
Bryant, AR 72002
501/847-9458

C. DESCRIPTORS: Conservation Education, Energy Education, Environmental Education, Outdoor Education, Population Education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED: Arkansas Department of Education in drafting original plan of operation; Arkansas Ecology Center, educational unit of Arkansas' interest; Arkansas Forestry Commission, supplemental unit development; and Museum of Science and History, Little Rock, for animal unit development.

F. HISTORY:

1) Principal originators:
   Alan Peek, former teacher
   Bill Fulton, environmental specialist with the Arkansas Department of Education
2) Date and place of initiation:
   August, 1975; Bryant Public Schools
3) Funding sources utilized:
   Title IV B, E.S.E.A.
4) Overall purpose:
   To promote an environmental awareness so as to aid decision-making processes in future adults in the Arkansas community.

G. OBJECTIVES: None listed.

H. MATERIALS:

1) Materials produced:
   Secondary (7-12) -- Five curriculum units, each 3 weeks long:
   1 -- Animal Ecology
   2 -- Environmental Pollutions
   3 -- Environmental Decisions
   4 -- Natural Divisions of Arkansas
   5 -- Plants and Man

2) Free materials available:
   Brochure explaining basics of the project
3) Materials purchasable: None
4) New instructional materials being developed:
   Three week units for instructional purposes for grades 7 through 12:
   1 -- Energy in Arkansas
   2 -- Reading the Environment
   3 -- Water Resources in Arkansas
5) Materials anticipated for development:
   Support materials for the above
6) Commercial association: None

I. IMPLEMENTATION

1) Schools using entire set of materials: 19
2) Teachers adopting all of the materials: 30
3) Teachers using some of the materials: 60
4) Total students using all of the materials: 3,900
5) Totals are estimated.
6) Selected schools where the program materials are being used:

DeQueen Public Schools
West Coulter
DeQueen, AR 71832

Texarkana Public Schools
1500 Jefferson
Texarkana, AR 75502

Cabot Public Schools
504 East Locust
Cabot, AR 72023

Star City Public Schools
Drawer 39
Star City, AR 71667

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (five days)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION: Staff only

L. SUMMARY OF ACTIVITIES TO DATE:

Bryant Environmental Education Project has been a successful small project with 19 schools adopting the project in the past three years. Thirty schools are anticipated to adopt the program in the school year 1980-81.

Most schools involved with the project are very encouraged with it and promote it to adjacent schools.

M. PLANS FOR THE FUTURE:

1) More teaching units (with materials, equipment and supplies).
2) Regional consultants being hired to sponsor field trips.
3) Involving more schools each year.
4) Enlarging headquarters staff.

N. REPORT SUBMITTED BY: Alan Peek
Coordinator
September 14, 1979

A. TITLE: DEQUEEN ENVIRONMENTAL EDUCATION PROJECT

B. DIRECTOR: Nancy Copeland
104 North 12th
DeQueen, AR 71832
501/584-4454

C. DESCRIPTORS: Conservation Education, Energy Education, Environmental Education, Natural Resources, Outdoor Education

D. HEADQUARTERS: DeQueen School District
Coulter Drive
DeQueen, AR 71832
501/584-2426

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Outdoor education complex

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: Soil Conservation Service, Weyco Forestry

F. HISTORY:

1) Principal originators:
   Nancy Copeland
2) Date and place of initiation:
   1973; DeQueen
3) Funding sources utilized:
   Weyerhauser Company; SWEPCO Electric; D&E Railroad; Soil Conservation Service; and, individuals
4) Overall purpose:
   To establish decision making problems for the student to reason through and ultimately become more environmentally aware.

G. OBJECTIVES

1) To establish an environmental education center for this area.
2) To give the student an awareness of our environment.
3) To let the students make environmental decisions.

H. MATERIALS:

1) Materials produced:
   Primary (K-4) -- Projects to do on a weekly basis.

2) Free materials available: None indicated
3) Materials purchasable: None indicated
4) New instructional materials being developed:
Yes, for grade level 10
5) Materials anticipated for development:
Slide series for K-4
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 1
2) Teachers adopting all of the materials: 17
3) Teachers using some of the materials: 20
4) Total students using all of the materials: 825
5) Totals stated are definite

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
Workshop (weekend)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION: Staff

L. SUMMARY OF ACTIVITIES TO DATE:

1973 and 1974: Environmental Summer Camp for 86 and 56 students, respectively; at rented camp complex for ten days. Very successful, but discontinued due to prohibitive price.

1975 and 1976: Environmental Education project during school year involving 1,400 students.

1977: Started Outdoor Education Complex.

1978: Backpacking trip to Virginia for seniors; yearly activities involving 1,600 students, grades K-12.

1979: Outdoor Education Complex is half completed.

M. PLANS FOR THE FUTURE: Yes

N. REPORT SUBMITTED BY: Nancy Copeland
Director
September 17, 1979

A. TITLE: ENVIRONMENTAL EDUCATION

B. DEVELOPER: Judy H. Bone
Des Arc High School
Route 2 -- Box A
Des Arc, AR 72040
501/256-4321

C. DESCRIPTORS: Conservation Education, Energy Education, Environmental Education, Natural Resources, Outdoor Education, Population Education, Urban Environmental Education

ADDITIONAL DESCRIPTORS: Values Clarification

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: Bill Fulton, Arkansas Department of Education, Environmental Specialist

F. HISTORY:

1) Principal originators:
   Judy H. Bone
2) Date and place of initiation:
   August 17, 1979; Des Arc High School
3) Funding sources utilized:
   None
4) Overall purpose
   To enable students to gain an awareness and appreciation of their environment, so that they may know how to use, preserve, protect and restore the environment.

G. OBJECTIVES

1) To understand each student's place and role in the environment.
2) To understand how the environment works.
3) To understand how man harms the environment.
4) To learn how to stop environmental pollution.

H. MATERIALS: None

I. IMPLEMENTATION:

Total students using all of the materials: 23

J. TEACHER PREPARATION: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

This is a new class for juniors and seniors in high school. Materials being used are from the U.S. Forest Service, Arkansas Department of Education, Arkansas Ecology Center, Little Rock Zoo and various other research and reference books.

M. PLANS FOR THE FUTURE:

Continuation of this course.

N. REPORT SUBMITTED BY: Judy H. Bone
Developer and Facilitator
September 12, 1979

A. TITLE: BRUNO-PYATT ENVIRONMENTAL AWARENESS ACTIVITIES IN THE OZARKS

B. DIRECTOR: Jerry C. Huddleston
P.O. Box 129
Pyatt, AR 72672
501/427-3428

C. DESCRIPTORS: Conservation Education, Energy Education, Environmental Education, Natural Resources, Outdoor Education, Population Education

ADDITIONAL DESCRIPTORS: Rural Environmental Education, Animal Ecology, Environmental Pollution, Natural Divisions of Arkansas, Cave Ecology, Cave Surveying, Mammal Surveys, Water Analysis

D. HEADQUARTERS: Bruno-Pyatt Public Schools
Route 2
Everton, AR 72633
501/427-5227

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Activities -- Field projects and students teaching the elementary classes
Facilities -- An outdoor classroom

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED: Museum of Science and History; SCS slides and materials; Buffalo River NPS; Tom Aley, Ozark Underground Labs; U.S. Forest Service, materials and speakers; Bryant Environmental Education Project; University of Arkansas Department of Zoology, materials and projects.

F. HISTORY:

1) Principal originators:
    - Bryant Schools (Alan Peek)
    - Bruno-Pyatt Schools (Jerry C. Huddleston)
2) Date and place of initiation:
    - Bryant and Bruno-Pyatt 1977-1978 school year
3) Funding sources utilized:
    - State funding under the Bryant Environmental Education Project; state funding under Tom Graff's geography project (University of Arkansas).

4) Overall purpose:
   To make the student and the community aware of how man fits into the environment and also the relationships that exist between the environment, the economy, energy and the decision making process.

G. OBJECTIVES:

1) To increase students' awareness in
    a. animal ecology
    b. environmental pollution
    c. natural divisions of Arkansas
    d. cave ecology and mapping
    e. mammal surveying
    f. lab and field techniques
    g. water analyses
2) To prepare the student to
    a. make lesson plans
    b. take field notes
    c. do field work and lab work
    d. be a wise consumer and voter
    e. get involved in his community

H. MATERIALS:

1) Materials produced:
   Primary (K-6) -- skins and specimens; slides; lesson plans.
   Secondary (7-12) -- skins and specimens (live and preserved); slides; lesson plans; guides (field work); outdoor classroom projects.
2) Free materials available: None
3) Materials purchasable:
   Slide program on cave ecology
4) New instructional materials being developed:
   Slides and guides in cave ecology, cave mapping and cave safety for grades 10-12 and college.
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 0
2) Teachers adopting all of the materials: unknown
3) Teachers using some of the materials: 4
4) Total students using all of the materials: 35
5) Totals stated are definite.

J. TEACHER PREPARATION: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

By using the classroom, the outdoor classroom, and available resource materials, the student prepares his project. He then teaches his project to the elementary students, at which time he is evaluated by the elementary teachers. He then teaches his subject area to his peers. Also, the student has certain field work projects that he may or may not coordinate through an agency such as the University of Arkansas, National Parks Service, U.S. Forest Service, etc. These projects include such things as testing the streams in the area, mapping caves, doing mammal surveys etc. The student must take field notes and follow up his field work with a written report. The other field activities encompass the further development of our outdoor classroom through such things as trail construction, markings, self-guide booklets, special trails for studying slope, plants, rocks, etc.

M. PLANS FOR THE FUTURE:

Additional activites planned include developing an archeology project at several bluffs and over-hangs which will make excellent dig sites. There is work going on with a local botanist dealing with developing a project in Vegative Analysis.

N. REPORT SUBMITTED BY: Jerry C. Huddleston
Director
September 6, 1979

A. TITLE: ARKANSAS ECOLOGY (NINTH GRADE SCIENCE COURSE)

B. DIRECTOR: Richard H. Martin
Chaffin Junior High School
3025 Massard Road
Fort Smith, AR 72903
501/452-2226

C. DESCRIPTORS: Energy Education, Environmental Education, Natural Resources, Outdoor Education, Population Education, Urban Environmental Education

ADDITIONAL DESCRIPTORS: Pollution, Arkansas Natural Divisions, Map Reading, Human Body Systems Review related to environmental and societal pollutions

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: None

CONSULTANT SERVICES UTILIZED: Many people have had input into the course, but there haven't been any professional consultant services used in the design of the course. Major idea, resource and equipment contributors include: Quent Baker, Niwot High School, Niwot, Colorado; from Little Rock, Tom Foti, Arkansas Ecology Center and Bill Fulton, Arkansas Department of Education; and, Alan Peek, Bryant Environmental Education Project, Bryant, Arkansas.

F. HISTORY:

1) Principal originators:
   Rick Martin
2) Date and place of initiation:
   September, 1975
3) Funding sources utilized:
   Some equipment and background unit texts -- Bryant Environmental Education Project -- Title IVc, ESEA
4) Overall purpose:
   To develop interest and understanding in our stewardship role in the biosphere; and, to develop an appreciation of the beauty of the natural environment and the systems that operate there.

G. OBJECTIVES:

The student will:
1) be able to demonstrate skill in various phases of living in a natural outdoor environment (map reading, tree and rock identification, animal activity, compass reading, pacing, outdoor living);

2) be able to demonstrate an understanding of major ecological concepts and natural phenomena operating in our biosphere and be able to recognize how man is involved in them;
3) be able to demonstrate an understanding of the logical, scientific approach to problem solving;
4) show further development of citizenship traits that involve operating as a part of a group -- solving problems and working together;
5) understand general principles concerning the functioning of and the effects of certain drugs on the human body;
6) be able to demonstrate knowledge of the natural divisions of Arkansas;
7) further develop skills for note taking in school or other lecture situations; and,
8) be aware of various fields of science from which careers may be chosen.

H. MATERIALS:

1) Materials produced:
   Course syllabus, various tests, general resources and activities list.
2) Free materials available:
   listed above
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development:
   Course text (grades 9 through 12)
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 1
2) Teachers adopting all of the materials: 1
3) Teachers using some of the materials: 1
4) Total students using all of the materials: 107
5) Totals stated are definite.
6) Selected schools where the program materials are being used:
   Chaffin Junior High

J. TEACHER PREPARATION: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

"Mini" field trips (during one class period) for tree identification, leaf collecting, animal signs, small mammal trapline, trust games, water testing, soil testing, compass course and pacing, fire building, sewage plant visit.

Major field trips (day or half day) for map reading, Arkansas Natural Divisions, leaf collecting, nature hike.

Overnight trips for outdoor living instructional campout for each class section.

After school hours activities such as studying skin preparation, study/help sessions.

Summer trips of 11 days to Keystone, Colorado, including two days on the Buffalo River (Arkansas) and six days in the Keystone Environmental Education Program.

In class activities including various films, lectures, simulation games and demonstrations.

M. PLANS FOR THE FUTURE:

Three week summer course on Arkansas Natural Divisions to include two weeks of field trip experience.

Additional all day or half day field trips for air and water testing.

Help with elementary school instruction by course students.

Possible wilderness living mini-course.

All day geology field trip.

N. REPORT SUBMITTED BY: Richard H. Martin
September 23, 1979

A. TITLE: ENVIRONMENTAL SCIENCE PROGRAM

B. INSTRUCTOR: Richmond Edwards
614 Fruitwood
Hot Springs, AR 71901
501/525-1935

C. DESCRIPTORS: Conservation Education, Energy Education, Environmental Education, Marine Education, Natural Resources, Outdoor Education, Population Education, Urban Environmental Education

ADDITIONAL DESCRIPTORS: Vegetation Analysis, Air and Water Analysis

D. HEADQUARTERS: Hot Springs High School
701 Emory Street
Hot Springs, AR 71901

E. PRINCIPAL STAFF: 1

F. HISTORY:

1) Principal originators:
   Richmond Edwards
2) Date and place of initiation:
   September, 1974
3) Funding sources utilized:
   Science budget
4) Overall purpose:
   To teach a well-rounded environmental course tailored to the student's needs.

G. OBJECTIVES: None indicated

H. MATERIALS:

1) Materials produced:
   Secondary (7-12) -- Environmental Science I Booklet (100 pages); Environmental Science II Booklet (150 pages).
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None

I. IMPLEMENTATION: In single classroom only

J. TEACHER PREPARATION: Not applicable

K. MATERIALS EVALUATION: Self-evaluated

L. SUMMARY OF ACTIVITIES TO DATE: None indicated

M. PLANS FOR THE FUTURE:

Energy related activities

N. REPORT SUBMITTED BY: Richmond S. Edwards
September 25, 1979

A. TITLE: NATURAL DIVISIONS OF ARKANSAS

B. DIRECTOR: Thomas Foti
President, Oakleaf Institute, Inc.
1008 South Cumberland Street
Little Rock, AR 72202
501/372-3779

C. DESCRIPTORS: Environmental Education

ADDITIONAL DESCRIPTORS: Geographical Systems

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

F. HISTORY:

1) Principal originators:
   Thomas Foti
2) Date and place of initiation:
   1976; Arkansas Ecology Center, Little Rock
3) Funding sources utilized:
   U.S. Office of Education
4) Overall purpose:
   To teach students what an environment is and how people relate to it by examining environments which occupy relatively large regions.

G. OBJECTIVES:

1) To define natural system (environment)
2) To define natural division (region)
3) To describe the natural divisions in the area through the use of maps and field trips.

H. MATERIALS:

1) Materials produced:
   Secondary (7-12) -- Two texts, seven slide shows, tests, reference lists
2) Free materials available: None
3) Materials purchasable:
   Text: "Natural Divisions of Arkansas" $2.00
   Slide shows: $150.00 for seven
4) New instructional materials being developed:
   Materials for grade levels 7 through 12
5) Materials anticipated for development:
   National text similiar to the above texts.
6) Commercial association:
   Oakleaf Institute, Inc., for printing and distribution

I. IMPLEMENTATION:

1) Schools using entire set of materials: 20
2) Teachers adopting all of the materials: 20
3) Teachers using some of the materials: 2,000
4) Total students using all of the materials: 1,000
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Mills High School Little Rock, AR	Fort Smith High School Fort Smith, AR
Stuttgart High School Stuttgart, AR	

All North Little Rock sixth grade classes.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1-5 days)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Supplement to the classroom guide.

K. MATERIALS EVALUATION:

Evaluator: Bryant Environmental Education Project

L. SUMMARY OF ACTIVITIES TO DATE:

Developed three-week unit through two years of involvement in six classrooms.

Unit has been distributed to other schools for use.

General public has been informed through many presentations before civic groups, garden clubs, industry associations and so forth, along with six half hour television programs.

Teachers have been informed through pre-service meetings and other workshop-type meetings. Several in-service and graduate level courses have been taught.

M. PLANS FOR THE FUTURE:

Further teacher workshops, more evaluation and expansion to national level program.

N. REPORT SUBMITTED BY: Thomas Foti
September 10, 1979

Previous Directory Reference: 1976

ERIC Document:

ED 134 441	Arkansas: Its Land and People
ED 180 742	The Natural Divisions of Arkansas: A Three-Week Unit. Classroom Guide

A. TITLE: ECONOMIC, ENERGY, ENVIRONMENTAL AND CONSERVATION EDUCATION PROGRAMS

B. COORDINATOR: Helen D. Holmes
Capitol Mall
State Education Building 104W
Little Rock, AR 72201
501/371-2061
501/371-2791

C. DESCRIPTORS: Conservation Education, Energy Education, Environmental Education, Natural Resources, Outdoor Education, Population Education, Urban Environmental Education

ADDITIONAL DESCRIPTORS: Economic Education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 2 specialists; 2 secretaries and the coordinator

CONSULTANT SERVICES UTILIZED: Free services from most all resource managers of state and federal agencies and all private environmental groups

F. HISTORY:

1) Principal originators:
   The Department of Education and the Conservation Districts
2) Date and place of initiation:
   1969; Conservation Districts implemented a conservation education unit in the Department of Education
3) Funding sources utilized:
   State funds in 1970, and Health, Education and Welfare funding by USOE's Environmental Education Office in 1971-1973; Title IV and V funds in 1974-1979.
4) Overall purpose:
   To promote economic, energy, environmental and conservation education in Arkansas schools and communities.

G. OBJECTIVES:

1) Provide coordination and leadership in economic, energy, environmental and conservation education for Arkansas schools, teachers and students alike.
   1.1 Obtain funds from federal, state and other sources to carry out programs.

1.2 Produce a state plan in economic, energy, environmental and conservation education involving various state agencies and community groups in the planning and implementation of such a plan;
1.3 Produce legislation to implement the state plan;

2) Provide consultant services which includes to motivate and inform, encourage, advise, develop programs, supervise and evaluate in economic, energy, environmental and conservation education for local education associations, colleges, governmental agencies, private organizations, community and youth groups.
   2.1 Provide consultant services to school curriculum programs;
   2.2 Inform, advise and develop programs in conjunction with governmental agencies;
   2.3 Provide field trip consultant service on Natural Divisions Of Arkansas and Reading the Environment;
   2.4 Provide consultant services to Bryant Environmental Education Project.

3) Provide in-service and pre-service training for teachers, natural resource managers, students, administrators, business and community members.
   3.1 Conduct summer graduate level workshops for teachers at each of the universities;
   3.2 Meet with Arkansas Advisory Council on teacher certification and require three hours of environmental and conservation education for teacher certification.

4) Develop and disseminate media materials to create awareness, to motivate and instruct teachers, students and general public.
   4.1 Produce half hour television shows and slide shows for energy and environmental with emphasis on Arkansas;
   4.2 Develop spot announcements (30-40 seconds) for use as public service spots on television;

5) Develop and distribute informative and curriculum materials.
   5.1 Develop K-12 Arkansas economic, environmental and conservation education material including writing materials for elementary students to enhance the basic studies, particularly reading;
   5.2 Work with Arkansas Department of Energy to obtain from other states energy education materials to develop for Arkansas and disseminate;
   5.3 Distribute informational materials from other groups or agencies to Arkansas schools.

H. MATERIALS:

1) Materials produced:
    - *Let's Twitter About Litter* (grades 3-4)
    - *Don't Be a Quitter, Pick Up Litter* (grades 1-2)
    - *Ernie Erg's First Primer on the Economics of the Energy Crisis* (grades 4-6)
    - *Ernie Erg's Second Primer on the Economics of the Energy Crisis* (grades 6-7)
    - Secondary (7-12) --
        - *Farkleberry Cookbook in Environmental Education*
        - *Arkansas -- Its Land and People*
        - *Natural Divisions of Arkansas* (book and 80 slides)
        - *Energy 1984*
        - Architecture and the Environment (150 slides)
2) Free materials available:
    Free to Arkansans; there are no publishing capabilities or funds to print for selling quantities to other states.
3) Materials purchasable:
    Slide shows at cost; at current prices, approximately $.35 per slide ($30 for the 80 slide set of Natural Divisions of Arkansas; $55 for the 150 slide set of architecture and environment).
4) New instructional materials being developed:
    Energy education for all grades, elementary materials; reading books on environmental/energy/economic concepts and issues.
5) Materials anticipated for developing: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

The program is not set up so that schools would adopt all of the materials. Presently, one quarter of Arkansas' 28,000 teachers are using some of the material, while one third of the 28,000 teachers will be adopting the energy material.

It is estimated that one quarter of all Arkansas students are using some of the materials.

Some selected schools where the materials are being used are:

Bryant School District
Alan Peek, Director
Bryant, AR 72022

Stuttgart School District
Tana Beasley
Stuttgart, AR 72160

Star City School District
Liz Hargis
Star City, AR 71667

DeQueen School District
Nancy Copeland
DeQueen, AR 71832

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    - Workshop (one day, one week and two week)
    - Summer Institute
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
    - Investigating Your Environment (U.S. Forest Service)
    - Reading the Environment (written explanation of Forest Service lessons)
    - Natural Divisions of Arkansas (slides)

K. MATERIALS EVALUATION:

1) Evaluator: Pre- and posttests on "Reading the Environment"
    Workshop evaluations.
2) Pertinent published research on evaluation:
    Annual report of Arkansas Department of Education
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

The program began in 1970 and today has three full-time staff members. The program has produced five years of education television programs on environmental education, numerous publications, such as the Farkleberry Cookbook and the Natural Divisions of Arkansas and a number of graduate level Forest Service summer workshops. This year the program's advisory council has sent to the Governor's office a state plan entitled "Arkansas E^4" (Energy-Ecology-Economic-Engineering) for approval. Also a new organization began entitled "T.R.E.E. of Arkansas" (Training Resources in Environmental Education). This organization helps in training people in environmental education techniques and methods. Their motto is "Hug a TREE". T.R.E.E. of Arkansas has brought Project Learning Tree to our state. The program has helped sponsor four statewide Environmental Congresses. Its greatest achievement is its ability to serve as abridge between the diverse and sometimes conflicting organizations, agencies, and industries which are involved in environmental education. Its staff has served as readers and consultants to the U.S. Office of Education, Environmental Education Office, and has received a number of state and federal awards.

M. PLANS FOR THE FUTURE:

In the coming year, selection and/or development of an energy curriculum for Arkansas' schools is planned. Also, there are plans to develop a series of children's readers about different environmental issues.

N. REPORT SUBMITTED BY: Helen D. Holmes
September 4, 1979

Previous Directory References: 1973, 1975

ERIC Documents:

ED 103 201	Man and Environment, A Multidisciplinary Teachers Guide
ED 106 095	The Farkleberry Cookbook in Environmental Education: An Activity Guide for Creative Teachers
ED 107 484	Man and Environment
ED 134 441	Arkansas: Its Land and People
ED 134 442	Ernie Erg's Second Primer on the Economics of the Energy Crisis

A. TITLE: ENVIRONMENTAL EDUCATION

B. INSTRUCTOR: Cheryl Hollingshead
Lake Hamilton Junior High
Route 1 -- Box 105
Pearcy, AR 71964
501/767-2731

C. DESCRIPTORS: Conservation Education, Energy Education, Environmental Education, Natural Resources, Outdoor Education, Population Education, Urban Environmental Education

ADDITIONAL DESCRIPTORS: Wildlife and Endangered Species Education, Industrial Economics and Issues

D. HEADQUARTERS: Lake Hamilton Junior High
Highway 70 West
Hot Springs, AR 71901
501/767-2731

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Outdoor classroom area.

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: In development of the outdoor classroom area and in the teaching of different programs, the U.S. Forest Service, S.C.S., National Parks Service, Arkansas State Park Service, Weyerhauser Company, Union Carbide, Reynolds, Arkansas Ecology Center, State Energy Department and different universities.

F. HISTORY:

1) Principal originators:
   Cheryl Hollingshead
2) Date and place of initiation:
   1972
3) Funding sources utilized:
   None. This program has been designed around activities and resources which require little money because of low school budget. By utilizing the resource people in the area, slides, films and written material, as well as speakers, are all provided for the students at no cost to the school.
4) Overall purpose:
   To create a concerned, aware, educated citizen who looks for answers and really does something to solve environmental dilemmas.

G. OBJECTIVES:

1) Make students aware of problems.
2) Research ways of solving problems.
3) Look at economic and social factors of issues.
4) Look at industry's side as well as conservation's side.
5) Students must take a stand on issues based on their findings

H. MATERIALS:

1) Materials produced:
   Primary (K-6) -- Development of a set of lesson plans dealing with the outdoor classroom area.
   Secondary (7-12) -- Development of lesson plans for outdoor classroom; development of environmental games and debates.
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed:
   For junior high level, adaptable to elementary or senior high grades
5) Materials anticipated for development:
   Energy information
6) Commercial association: None

I. IMPLEMENTATION:

Single school program involving around 1,600 students to date.

J. TEACHER PREPARATION:

Personal consultative correspondence with instructor.

K. MATERIALS EVALUATION: Self-evaluated

L. SUMMARY OF ACTIVITIES TO DATE:

This is an unstructured program taught in a fast-growing district with very little money. Undeveloped land which includes field, stream and forest is available for all kinds of environmental and ecological studies. In the classroom, community and state problems are looked at and researched utilizing all resources available. All sides to the issue are presented in class through debates, games and/or role playing. Students are encouraged to write to government officials and industry representatives to get information and to state their opinions. If any environmental issues are to be voted on in the area, the students are presented with the facts to relay to their parents in hopes to get them involved, also.

M. PLANS FOR THE FUTURE:

To develop new energy material concerning problems in the area.

N. REPORT SUBMITTED BY: Cheryl Hollingshead
September 11, 1979

A. TITLE: LAKE FAYETTEVILLE ENVIRONMENTAL STUDY CENTER

B. DIRECTOR: Hal Brown
511 Lakeview Drive
Springdale, AR 72764
501/751-1840

C. DESCRIPTORS: Conservation Education, Energy Education, Environmental Education, Natural Resources, Outdoor Education

ADDITIONAL DESCRIPTORS: Limnology

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Visitors are welcome to observe the formal classwork, may walk our various trails and outdoor displays, and by prior arrangement, may utilize center staff and facilities for programs.

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED: University of Arkansas, Departments of Zoology, Bacteriology, Plant Pathology, Geology, Botany, Graduate Education, Geography, the Museum, Soils Laboratory and the University Farm.
Fayetteville Public Schools, Departments of Biology, Science and Social Studies.
Springdale Public Schools.

F. HISTORY:

1) Principal originators:
   Tom Jenkins, Fayetteville High School Biology Department
2) Date and place of initiation:
   September, 1974; Lake Fayetteville
3) Funding sources utilized:
   Title III E.S.E.A. and Youth Conservation Corps grants from the federal government; City of Fayetteville; public schools of Springdale and Fayetteville.
4) Overall purpose:
   To increase student awareness of environment in general, alert them to the fragility of ecosystems and northwest Arkansas water supply in particular

G. OBJECTIVES

To work with one fairly well defined drainage basin in Northwest Arkansas to render more teachable the complex variety of chemical, physical and biotic parameters involved in limnology of the Ozarks; and, to provide generalized ecological studies and recreational experiences including minimal impact adventure experiences for junior and senior high school students, open access for the handicapped, and more complete use by the adult public.

H. MATERIALS:

1) Materials produced:
    Fifth grade -- teacher's sourcebook; pre- and post-tests, overhead transperency set, slide/tape on industrial water use in northwest Arkansas, slide/tape on Northwest Arkansas water cycle.
    Eighth grade -- topographic map, materials for orienteering
    Tenth grade -- teacher's sourcebook, student guide, pre- and post-tests, slide tapes on nutrient contaminants of Northwest Arkansas water, sewage treatment plant.
    Other -- self-guiding trail brochure and map, sensory guiding trail brochure and map, field trail map, geology wall brochure
2) Free materials available:
    All of the above except the audio-visual material.
3) Materials purchasable: None
4) New instructional materials being developed:
    Material for the fifth grade level
5) Materials anticipated for development:
    Slide/tape shows, photomicrographs and brochures for general public and school use.
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 22
2) Teachers adopting all of the materials: 65
3) Teachers using some of the materials: unknown
4) Total students using all of the materials: 3,659
5) Totals stated are definite.
6) Selected schools where the program materials are being used:

Butterfield Trails
Elementary School
Old Missouri Road
Fayetteville, AR 72701

Fayetteville High School
1001 Stone Street
Fayetteville, AR 72701

Central Junior High School
West Huntsville and
Gutensohn Road
Springdale, AR 72764

Jones Elementary School
Powell Street
Springdale, AR 72764

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshops
    Summer Institute (one week, two weeks)
    Workshops originally organized to train area teachers for the program, but are branching out to include sessions on limnology, archaeology, geology and arts.
5) Available pre-service and/or in-service treaching materials for educators to use in preparing teachers:
    Teacher sourcebooks, fifth and tenth grade orienteering and topographic materials. Research and monograph files, naturalist literature.

K. MATERIALS EVALUATION:

1) Evaluator(s):
    Dr. Furst, testing evaluator, graduate education, University of Arkansas.
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

The original focus of the Center was the study of aquatic resources particularly in Northwest Arkansas. By linking the study to one fairly well defined drainage basin, the authors of the initial program hoped to render more teachable the complex variety of chemical, physical, and biotic parameters involved in limnology of the Ozarks. Data on each of the parameters is gathered periodically on Lake Fayetteville by high school students and Center staff. Students are confronted with the task of determining the quality of our water and the changes caused by man. These studies are fascinating to the students, and provide them with an unforgettable experience which should prove vital to maintenance of future water quality.

As the early fifth and tenth grade programs have been refined and established, the focus of our energies has shifted to include more universal environmental activities. An eighth grade course in orienteering has begun, with a two week introductory classroom learning experience culminating in a day long visit to the Center for static mapping, sounding of the lake for an underwater topographic map, cross-country navigation, and running of our orienteering course. Many miles of trails have been added, and existing trails improved. These trails include: The Willow Trail (open access to lake and forest for those in wheel chairs); The Sensory Trail (exposure to nature using senses other than sight for the vision-impaired); The Self-Guide Trail (a mile-long walk along shore and ridgeline which can be taken solo using a brochure keyed to stations on the trail); and, The Field Trail (an easy walk for youngsters displaying the wealth of habitats in an "empty" field. A Project Adventure type ropes course has been built for advanced students. These improvements have greatly enriched the original programs as well as expanded the usage of the Center by the general public.

M. PLANS FOR THE FUTURE:

1) Expansion of participation by general public;
2) development of arboretum;
3) amplification of teacher workshops to on-going summer program;
4) expansion of open access trail;
5) building of an underwater aquarium;
6) increasing the Center's utilization by University of Arkansas graduate students and advanced high school researchers.

N. REPORT SUBMITTED BY: Hal Brown
September 24, 1979

Previous Directory Reference: 1972

A. TITLE: ENVIRONMENTAL EDUCATION

B. DIRECTOR: Tana Beasley
Stuttgart High School
P.O. Box 928
Stuttgart, AR 72160
501/673-3561

C. DESCRIPTORS: Conservation Education, Environmental Education, Outdoor Education, Population Education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Outdoor classroom 11 miles from school; activities listed in the handbook

E. PRINCIPAL STAFF: 15

CONSULTANT SERVICES UTILIZED: Little Rock Public Schools, Environmental Specialists Dennis Glasco, Barbara McAfee

F. HISTORY:

1) Principal originators:
   Dennis Glasco and Barbara McAfee
2) Date and place of initiation:
   March, 1975; Little Rock
3) Funding sources utilized:
   E.S.E.A., Title III
4) Overall purpose:
   To promote environmental awareness

G. OBJECTIVES:

1) To increase students' awareness of the interdependence between living and non-living factors in the environment;
2) To increase students' knowledge of the make-up and function of food chains, food webs, plant and animal populations, communities, ecosystems, succession, and climax of communities in an environment;
3) To increase students' skill in setting up laboratory investigations involving the collection and observation of materials, the recording and interpreting of data, and the use of data in forming conclusions.

H. MATERIALS:

1) Materials produced:
   None; Little Rock's program was revised to fit the needs of this program.
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed:
   Materials for grade levels 1, 2 and 10.
5) Materials anticipated for development:
   "Hands-on" experiences related to environmental awareness.
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 4
2) Teachers adopting all of the materials: 15
3) Teachers using some of the materials: 0
4) Total students using all of the materials: 800
5) Totals stated are estimated,
6) Selected schools where the program materials are being used:

Julia Shannon Elementary School
Buerkle Elementary School
Helman Elementary School
Stuttgart Junior High School

All reachable at: P.O. Box 928
Stuttgart, AR 72160

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (one day during pre-school in-service program; then individually as needed).
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None
6) Commercially available pre-service and/or in-service

K. MATERIALS EVALUATION: Staff-evaluated

L. SUMMARY OF ACTIVITIES TO DATE:

The Little Rock unit is divided into nine subject areas, each with a complete workbook. The titles and grade levels are:

4th -- Nature of the Environment
5th -- Interdependence in the Environment
6th -- Types of Environments
8th -- Types of Pollution
9th -- Environmental Decisions
10th -- The Balance of Nature

11th -- Environmental Problems
12th -- Population Problems
12th -- Science and Survival

M. PLANS FOR THE FUTURE:
To incorporate energy-related activities into the program.

N. REPORT SUBMITTED BY: Tana Beasley
September 28, 1979

A. TITLE: PROJECT "TREE HOUSE": A COMMUNITY ENVIRONMENTAL EDUCATION AND PARTICIPATION PROGRAM

B. COORDINATORS: Evie Wilke
Howard Kaplan

Environmental Education Division
California Conservation Project
12601 Mulholland Drive
Beverly Hills, CA 90210
213/769-2663

C. DESCRIPTORS: Conservation education, energy edcuation, environmental education, natural resources, outdoor education, urban environmental education.

ADDITIONAL DESCRIPTORS: Appropriate technology education, holistic environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Community Environmental Education and Participation Center -- organic garden, solid waste recycling system, composting system, chickens and rabbits, fruit trees, smog tolerant tree nurseries, solar hot water heater, nature trails, waterless composting toilet, urban forestry resource center. Volunteers and visitors participate in the development and maintenance of our center.

E. PRINCIPAL STAFF: 8

F. HISTORY:

1) Principal originators:
   Andy Lipkis, Rocky Rohwedder, Erv Peterson
2) Date and place of initiation:
   October, 1977
3) Funding sources utilized:
   Private donations to the California Conservation Project; Office of Environmental Education grant 1978; California Department of Education grant; Environmental Energy Education; Environmental License Plate Funds 1978, 1979
4) Overall purpose:
   To facilitate people of all ages working together to care for the earth. Through holistic, action-oriented environmental education programs, people learn about natural systems, how humans impact natural systems of which we are a part, and how each of us can live harmoniously with the planet.

The California Conservation Project, also known as Tree People, is a private, non-profit organization involving people in building a healthy future. Through the persistent efforts of Andy Lipkis, it was created in 1973 to plant smog tolerant trees in forest areas surrounding Southern California damaged by smog. Since then, the project has grown to include urban forestry, environmental education, and development of the community environmental education and participation center in its goals. Project "Tree House" to which the comments in this article are directed, is the environmental education component of the California Conservation Project.

G. OBJECTIVES:

1) Involve 8,000-10,000 children in TreePeople programs each year.
2) Provide practical experience in environmental education to approximately ten high school and college students through internships and independent study each year.
3) Prepare 200 teachers each year to use various environmental education curriculum materials through workshops.
4) Involve 80-100 children each summer in "Little Tree House," a creative arts workshop designed for young children to learn about the environment.
5) Prepare 15 dedicated community volunteers as TreePeople docents to help conduct education programs each year.
6) Involve community members in hands-on learning experiences such as solar energy workshops, organic gardening workshops, letter writing parties, environmental book club, environmental film festival, and urban and mountain tree planting.

H. MATERIALS:

1) Materials produced:
    Solar energy slide show; TreePeople slide show;
    Docent program booklet
2) Free material available:
    Literature about TreePeople
3) Materials purchasable:
    Tree Boy, a book by Shirley Nagel, $7.00
4) New instructional materials being developed:
    Primary grade level -- follow-up activities manual
    Primary and secondary grade levels -- outdoor predator/prey simulation
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION: Not applicable

K. MATERIALS EVALUATION: Not applicable

L. SUMMARY OF ACTIVITIES TO DATE:

Each year, the TreePeople interact with thousands of school children and people of all ages from clubs, religious goups, business service groups, and the general community. A positive, action-oriented spirit of working together to care for the earth permeates all of the TreePeople programs.

M. PLANS FOR THE FUTURE:

Environmental Education Program in the entire business and school community of Culver City, California, which will culminate in the planting of a 28 acre urban forest.

Extended programs with specific school classes. These programs will last several weeks and culminate in a positive action such as visiting legislators, planting trees, or setting up recycling systems.

N. REPORT SUBMITTED BY: Evie Wilke
Howard Kaplan
November 18, 1979

A. TITLE: HUMANISTIC ENVIRONMENTAL EDUCATION
The GREEN BOX Program

B. COORDINATOR: Cheryl Bonano-Christensen
Office of Education
County of Humboldt
901 Myrtle Avenue
Eureka, CA 95501
707/445-5411 ext. 265

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, urban environmental education.

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Outdoor school programs (if in session)

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED: Original project staff; also, 60 classroom teachers and evaluation consultants were employed CESP, Sacramento.

F. HISTORY:

1) Principal originators:
   Director, Bill Gafaney; in-Service coordinator, Kip Roberti; curriculum specialist, Helen Macpherson; environmental awareness sites, Pamela Miller; outdoor schools, Duke Cairns; additional writings, Cheryl Bonano-Christensen, and Mary Sanborn; special assistance, Ellen Ditzler, Brett Matzke, Hannah Tarlitz, Teri Knope, Jack Ward, Sal Gelardi, Barbara Kelly, Barbara Barratt, Judy Bohn, Ed Feliz, Debra Hartridge, Dee Ann Jones, Peggy McCormick, John Orloski, Margaret Ogle, Cheryl Palmer, Judy Bogle, Bruce Goldman, Steve Watson, and Dick Perkens
2) Date and place of initiation:
   September, 1972; Eureka, California
3) Funding sources utilized:
   E.S.E.A. Title IV-C
4) Overall purpose:
   To develop in each child an environmental ethic based upon a cooperative effort among all people to maintain a healthy environment, a respect for life and a sense of environmental responsibility. To achieve this goal the program is designed to produce an environmentally healthy adult -- one who makes sound decisions regarding his environment rather than decisions resulting in additional problems.

G. OBJECTIVES:

To develop environmentally healthy adults who possess:

1) A holistic view of the world; they have the ability to see the world operating as a whole, all things interdependent and continually changing, including themselves.
2) Effective problem-solving skills; they have an ability to identify a problem, select resources needed to solve it, and can work together with other people toward a solution.
3) Consistency in their values/actions; they have clarified what they believe and their behavior is consistent with those beliefs.
4) A strong sense of self-competence and importance; they have experienced success, have felt responsibility, and have an attitude that what "I" do makes a difference.
5) An expanded reality base; they have seen more, done more, and experienced more; they have a larger reality to draw upon when making decisions.

H. MATERIALS:

1) Materials produced:
   Primary grade level -- GREEN BOX, Environmental Education Curriculum Kit.
2) Free material available:
   Program description fliers and sample cards.
3) Materials purchasable:
   GREEN BOX, $52.95 plus freight.
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION::

Schools, teachers and students using materials:

It is difficult to estimate the number. 2,500 Green Boxes have been sold; potentially 75,000 students (one teacher per 30 students) could be using the Green Box. The program has been in operation for six years; many teachers have used it with a new class each of these years and therefore the number of students involved would have to be increased..

Selected schools where the program materials are being used:

Ocean View School
17241 Oak Lane
Huntington Beach, CA 92647

Jacoby Creek
Elementary School
Route 1 - Box 60
Bayside, CA 95521

Loomis Elementary School
3505 Taylor Road
Loomis, CA 95650

Freshwater School
Route 1 - Box 126
Eureka, CA 95501

J. TEACHER PREPARATION:

1) Consulative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshops (one day to two weekends)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   The Green Box kit can be used in this manner.

K. MATERIALS EVALUATION:

1) Evaluator:
   Educational Systems Planning, Sacramento, California
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary:
   Included in E.S.E.A. IV-C reports.

L. SUMMARY OF ACTIVITIES TO DATE:

The Green Box is a complete K-8 curriculum for conducting a humanistic environmental education program at school, in the community and at the outdoor school. It is easily adaptable to any teaching style. The kit is a set of 178 brightly illustrated, six by eight inch activity cards divided into three categories:

Do Cards -- 98 cards, three activities per card; for primary, intermediate, and upper levels.
Think Cards -- Five cards (six copies of each) that are the student's guide for interpreting any of the five major California State Department of Education Framework for Environmental Education concepts (also known as ekistics).
Show Cards -- 52 cards, each containing five to ten ways for students to communicate what they have learned from "do" and "think" card activities.

In addition, there are 18 activities to help develop a humanistic classroom climate, twenty-five teacher-directed activities to introduce Ekistics concepts, and a tracking sheet to chart student progress.

For community interaction, there are 25 cards with student-centered activities for investigating three types of environmental awareness sites: Rural, commercial and industrial. All activities are based on the concepts of use, interdependence and change and require a high degree of interaction between students and the community. Although many are specific to Humboldt County, they can be adapted to almost any area. Activities included are geared for children to investigate different relationships between themselves and their environment, such as agrarian and physical relationships in the rural community, commercial and industrial relationships, or industrial and economic relationships.

Projects and short activities are included in the box for use at an outdoor school, including 15 investigation projects which begin in the classroom, continue in the field and are completed back in the classroom, and, 15 short problem-solving encounters with the environment and each other. There is also a guide to aid students and teachers in preparing for a low-budget, minimum facility outdoor school experience in their own area.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Cheryl Bonano-Christensen
September 9, 1979

Previous Directory Reference: 1975

ERIC Document:

ED 121 592 GREEN BOX (A Kit of Environmental Awareness Activities to be Conducted on Field Trips)

A. TITLE: UNIVERSITY OF SOUTHERN CALIFORNIA
SEA GRANT EDUCATION PROGRAM

B. DIRECTOR: Dorothy M. Bjur
Marine Education Program
Institute for Marine and Coastal Studies
University Park, D.R.B. Room 298
University of Southern California
Los Angeles, CA 90007
213/741-5907 or 741-6068

C. DESCRIPTORS: Marine Education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Resource library for teachers

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED: In the development of three sets of marine education books as curriculum developers, editors, graphic artists, etc.

F. HISTORY:

1) Principal originators:
   The USC Sea Grant Program with Dorothy M. Bjur directing the education programs.
2) Date and place of initiation:
   September, 1974
3) Funding sources utilized:
   National Sea Grant funds plus special project grants
4) Overall purpose:
   To create a marine aware society

G. OBJECTIVES:

1) Through multidisciplinary marine education materials, and teacher workshops, integrate the marine concepts into the public classroom;
2) extend the programs into special areas as bilingual, handicapped, magnet schools etc.; and,
3) provide programs for adults as well as children in marine education.

H. MATERIALS:

1) Materials produced:
   Primary -- Multidisciplinary Marine Environmental Education Teachers' Guide; Marine Studies Idea Book
   Secondary -- Marine Studies Book

2) Free materials available: None
3) Materials purchasable: All
All materials are purchasable once published
4) New instructional materials being developed:
Three sets of materials currently being edited, graphically set and published, slated ready for dissemination in 1979.
5) Materials anticipated for development:
Slide presentation; "Songs of the Sea" book; book for the visually impaired; bilingual materials.
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using sets of the materials: 20-40
2) Teachers adopting all of the materials: Not indicated
3) Teachers using some of the material: 80-100
4) Total students using all of the materials: Not known
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Thirty-Second Street School
822 West 32nd Street
Los Angeles, CA 90007

Manual Arts High School
4131 South Vermont Ave.
Los Angeles, CA 90037

Lennox School District
(Five different schools)
10319 Firmona Avenue
Lennox, CA 90304

Brentwood Elementary School
740 Gretna Green Way
Los Angeles, CA 90049

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
Workshop (one to two days)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
Materials are in the developmental stages. There will be materials for bilingual teachers, visually impaired plus regular classroom situations.

K. MATERIALS EVALUATION:

1) Evaluator:
The Marine Environmental Education Guide and Marine Studies Books have been evaluated by classroom teachers.
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

USC has developed three sets of materials (please see section H). These materials have been evaluated, revised and edited and are presently being prepared for publication.

The Supplementary Guide has been translated into Spanish and funding has been granted to start an International Marine Educational program in Latin America. These same materials are being used (presently testing) for bilingual programs. As funding is available, the other materials will be translated and the Workshop Teacher's Guide assembled.

All of these materials have been used in preparing programs for magnet schools, summer camps, museums, boy and girl scouts, etc.

Teacher workshops have always been extremely important to the implementation of the materials and ideas. The program directors endeavor to conduct follow-up workshops to keep teachers abreast of new materials, ideas, etc.

M. PLANS FOR THE FUTURE:

1) To broaden the International Marine Environmental program to include more countries than the nine original participants in Latin America, and extend the program to other cultures than Spanish speaking countries.
2) To expand the bilingual program in California and other states where needed.
3) To adapt the visually impaired program to reach other handicapped youngsters.
4) To develop a university program for both students and public school teachers.
5) To expand the graduate student trainee program.

N. REPORT SUBMITTED BY: Dorothy M. Bjur
November 7, 1979

A. TITLE: T.O.T.E. PROJECT (TEACHER OUTDOOR TRAINING IN THE ENVIRONMENT)

B. DIRECTOR:
Durrell A. Maughan
Outdoor Education Specialist
Bellevue Youth Services Center
Los Angeles Unified School District
3317 Bellevue Avenue
Los Angeles, CA 90026
213/625-6583

C. DESCRIPTORS: Conservation education, environmental education, outdoor education

ADDITIONAL DESCRIPTORS: Student-to-student interaction

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 18

F. HISTORY:

1) Principal originators:
   Durrell A. Maughan
2) Date and place of initiation:
   1976
3) Funding sources utilized:
   California State Department of Education
   Los Angeles Unified School District
4) Overall purpose:
   To use backpacking as a vehicle to teach 22 basic subjects at the secondary level, for gifted, dropouts, and as an integration program.

G. OBJECTIVES:

1) Teach environmental education on the trail and in the classroom.
2) Promote student-to-student interaction in racially isolated schools.

H. MATERIALS:

1) Materials produced:
   Secondary -- Curriculum strategies for 22 subjects taught at the secondary level
2) Free materials available: None
3) Materials purchasable:
   Teaching kit will be available in 1980 from the Los Angeles Unified School District

4) New instructional material being developed:
New material for the secondary level is being developed.
5) Materials anticipated for development:
Student interaction material.
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 13
2) Teachers adopting all of the materials: 15
3) Teachers using some of the materials: 15
4) Total students using all of the materials: 1,000
5) Totals stated are definite.
6) Selected schools where the program materials are being used:

Center for Enriched Studies
2985 Robertson Blvd.
Los Angeles, CA 90034

Porter Junior High
(Magnet School - Gifted Program)
15960 Kingsbury Street
Granada Hills, CA 91344

Reed Junior High School
4525 Irvine Avenue
North Hollywood, CA 91602

Granada Hills High School
10535 Zelzah
Granada Hills, CA 91344

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
Workshops (60 hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
Teaching kit on the trail first hand experiences

K. MATERIALS EVALUATION: Due in May, 1980

L. SUMMARY OF ACTIVITIES TO DATE:

The purpose of the project is to use backpacking as a vehicle to help a variety of ethnic and socio-economic students and incorporate environment studies into basic subjects at the secondary school. This project will determine the effectiveness of teaching a wide range of curriculum materials in the classroom, followed by firsthand learning experiences in a natural mountain environment.

Curriculum materials are being developed to bring together factual information, references, illustrations and suggestions to guide students in making observations and establish an awareness in which environmental understandings and a variety of subject areas can interact in a mutually enriching way. Students use task cards to explore, discover, collect, create, interpret, and evaluate their findings.

The curriculum materials provide an integrated approach to teaching 22 subjects that will effectively teach environmental values and strategies through natural learning-by-doing activities. In addition to teaching students the basic 3R skills, other subjects that can be taught using backpacking as a vehicle are: Geology, meteorlogy, local flora, local fauna, astronomy, ecology, conservation practices, eco-damage study, environmental values, map and compass skills, history and culture of the area, personal conditioning skills, practical first aid, understanding group dynamics, outdoor exploration, reporting techniques, food planning and preparation, trail safety, survival skills, camping skills, developing a camp living site, care and use of camping equipment and recreational activities. Improving the student self-image, self-reliance and developing positive attitudes toward the school, teacher and learning is a goal of the social living experience

A workshop trains teachers to organize and teach the curriculum strategies and provide "learn-by-doing" activities in the classroom and on the trail. Teachers gain practical experiences in proficiency skills that relate to hiking on the trail: first aid, emergency procedures, environmental interrelationships and creating a social living environment.

Teachers use the curriculum materials to conduct a student course at their school. They then take the students to various areas of the Angeles National Forest, where the students will field test the first draft of the curriculum materials with the assistence of cadre personnel.

During the project year, from January to December, a model teaching kit will be finalized, a workshop will be conducted for 20 teachers and the project will be field tested with the curriculum materials for 500 students. At the conclusion of the project the school district will reproduce the teaching kits and make them available to other school districts and youth serving agencies at a nominal cost.

Two or three teaching trails will be identified in the Angeles National Forest to provide basic training for the skills taught in the classroom. Each trail will be set up to teach a different set of skills and provide a variety of experiences. Guide maps will be developed for teacher use. The trail guide experiences will provide opportunities for students to assume leadership positions for teaching one another the skills learned in the classroom.

Perhaps the greatest contribution made by the curriculum materials is to help students develop methods of solving problems that will contribute to their intellectual, social, emotional and physical development.

The philosophy and practice of using backpacking as a vehicle for learning has evolved through the school district's years of experiences with outdoor environmental education centers, the involvement with community agencies, and the influence of outstanding individuals.

It is natural to use backpacking as an approach to spark the curiosity and spirit of adventure for those students who have difficulty linking textbooks to the realities of daily living. Backpacking experiences will often make the 3R's more meaningful and stimulate students to realize that basic skills are necessary to find their way with a map and compass, or to research a subject and record their firsthand experiences. The change from a rural society to urban living has deprived many of our youth the close contact and direct learning opportunities that focus attention on the need and value of using the outdoors in the educational process. Providing concrete learning experiences become increasingly more important as the contemporary curriculum tends to place more emphasis on abstract knowledge.

This project is not another subject or discipline to be included in an already crowded curriculum, but represents an innovative and practical approach toward achievement of the accepted objectives of secondary environmental education. It is based on the interest of students and is charged with opportunities for educational and social growth difficult to duplicate in the regular classroom.

The school district recognizes the need to develop approaches which integrate the teaching of basic skills in the junior and senior high schools, including the interrelationship between learning basic skills and attitude development.

The backpacking idea in itself is so appealing to many junior and senior high students, and so charged with opportunities for educational and social growth, that our schools should not fail to capitalize on this significant fact.

New curriculum patterns can be developed with teacher experts that can provide training and experiences for teachers who lack the skills to teach integrated subjects at the secondary level.

Teachers who use backpacking as a vehicle are quite emphatic in saying that it improves mutual trust and confidence between student partners and leaders.

Thrown together in a single group with others who have different social, racial, economic and religious backgrounds, this project is designed to reduce the adverse impact of racial isolation.

Curriculum materials that can be easily adapted to the classroom are lacking. A teacher survey indicated that most of the published materials fail to organize skills into an integrated subject approach to teaching. The survey committee found that most books fail to deal adequately with the 22 classroom subjects identified as essential to an effective backpacking program.

Using a wide range of teaching techniques, this project will develop curriculum materials that will not only provide firsthand experiences on the trail, but can be transferred back to the indoor classroom with considerable effectiveness.

Secondary teachers will learn how to deal with subject matter outside their field of expertise. They will gain insights of how basic subjects and the curriculum objectives provide concrete experiences that will help students understand abstract concepts.

The project is designed for students in grades seven through twelve, but could be adapted for elementary pupils.

Approximately 20 teachers and 500 students were involved in the pilot project to field test the curriculum materials in four different geographic areas of the district.

A teacher training workshop was conducted to assist the 20 teachers in developing knowledge and leadership skills that will help them effectively evaluate the curriculum materials and student performances in the classroom and on the trail.

Most students in the school district have little opportunity to study and gain firsthand experiences in an outdoor environment. In our urbanized culture, teachers and youngsters need to have common experiences that will enable them to understand how real life situations relate to their work in the classroom and on the trail.

This project has the potential of expanding to the 75 junior and 49 senior high schools in the Los Angeles Unified School District.

The October, 1978, Racial and Ethnic Survey of the school district indicated a 67.2% combined student minority. This project will bring together students from different ethnic and racial backgrounds. It will assist students having difficulty coping with school and provide learning situations that will enhance basic skills. Students in grades eight and eleven scored 29.5% and 33.3% below Quartile One in the 1977 State Testing Program.

As teachers become trained and certified to conduct student classes in the district, they will use this project concept to affect the lives of hundreds of students over a 10-year period.

This curriculum teaching kit and workshop format can easily be adapted by other school districts and youth serving agencies.

Teachers are selected from various academic areas such as science, social studies, physical education, etc.

The teacher workshop developed and tested curriculum materials to be used in a course at their schools. They will teach the curriculum content and provide practice skill lessons in the classroom and at least one experience on the trail for each student.

An editor and two writers will develop a final draft of the curriculum strategies and produce a model teaching kit ready for production.

Plans for evaluation include using instruments to determine student attitudes, adjustments to the program, behavior changes and learning gains.

Using pre- and post-tests, the project will utilize approximately 500 students as a target group in grades seven through twleve to evaluate gains in specific curriculum subject areas.

The use of the Lawrence Introspective Pupil Survey, developed by the Los Angeles Unified School District (Research and Evaluation Branch) will measure student attitudes toward school, relations with others, emotional stability and self-image.

Pre- and post-test raw score gains on standardized and project-developed instruments will measure the significance of using backpacking as a vehicle to teach environmental values through basic subjects and to develop positive student attitudes toward learning, school and the teacher.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Durrell A. Maughan
Outdoor Education Specialist
November 5, 1979

A. TITLE: ENERGY ENVIRONMENTAL EDUCATION PROGRAM
CALIFORNIA DEPARTMENT OF EDUCATION

B. DIRECTOR: Rudolph J. H. Schafer
State Education Building
721 Capitol Mall
Sacramento, CA 95814
916/322-4018

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, outdoor education, population education, urban environmental education.

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Limited library and free materials; also, meetings to discuss projects and programs by appointment.

E. PRINCIPAL STAFF: 1 full time; 1 half-time consultant

CONSULTANT SERVICES UTILIZED: Two long-term consultants (retired school superintendents), and short-term people for specific jobs.

F. HISTORY:

1) Principal originators:
R.J.H. Schafer
2) Date and place of initiation:
January 1, 1968
3) Funding sources utilized:
State general funds for salaries and basic programs; personalized license plate sales for grant programs and specific projects; private industry for merit award program.
4) Overall purpose:
To assist school in developing effective environmental education programs using services and materials available from a variety of community agencies.

G. OBJECTIVES:

1) Statement of goals:

Environmental education is concerned with helping youngsters develop the knowledge skills and attitudes necessary to become involved in activities to conserve resources and preserve environmental health. Environmental education involves a variety of subject matter discipline areas, but is customarily associated with science, social studies and practical arts. The recently adopted County

Superintendents' Course of Study lists five major goals for environmental education programs:

1. Natural beauty -- respect for life -- To develop an appreciation of natural beauty and aesthetically pleasing surroundings and a reverence for all forms of life.

2. Ecology-Resource management -- To develop an understanding of basic ecology and the use of technology in activities for the management of renewable and non-renewable resources (e.g. planning for the use of land, producing and conserving energy, controlling pollution, protecting wildlife).

3. Values-Social mechanisms -- To understand how values, ethics, and morality form the basis upon which environmental and resource use decisions are made and the role that social institutions play in providing the mechanisms through which these decisions are implemented.

4. Personal lifestyle -- To develop a personal lifestyle which supports the environmental rights of others and contributes to the maintence of a healthy and productive physical environment.

5. Environmental Problem-solving -- To develop the ability to create viable solutions to environmental problems and to work independently or cooperatively to implement them.

2) Current Year Objectives

1. To develop interagency program to implement County Superindents' Course of Study.
2. Upgrade Student Environmental Merit Award Program.
3. Continue to offer on-going services.

3) Operational work plans to reach the objectives

Course of Study Implementation: Meet with teacher-resource management committee to review materials and develop scope and sequence outline.

Produce K-12 curriculum guide sample materials, and annotated catalog of materials, services and expertise available from state agencies.

Fund a minimum of 14 projects for local program development based on County Course of Study.

Upgrade merit award program: Prepare, in cooperation with California Energy Education Forum, an educator-public information program to secure more participation in student Merit Award Program.

Develop, in cooperation with CEEF, new recognition activities for winners as a means of creating greater interest in the program.

Continue on-going services and activities: Visit all License Plate funded projects at least once and prepare written reports on them.

Continue development of outdoor school accreditation program in cooperation with administrators of 26 such programs.

Provide consultant services to County and District administrators on a basis of 15 or more activities per month -- on-site or at this office.

Continue cooperative activities with federal agencies business and industry, professional societies and others to develop new materials and make them available to schools.

H. MATERIALS:

Materials produced are too numerous to mention; new materials are constantly being produced through grant programs.

A number of items are free and are sent out by this office; many of them are supplied by various public and private agencies.

New instructional material is being produced for grade levels K-12 dealing with integrated curriculum to implement the Course of Study as detailed in section G of this report.

I. IMPLEMENTATION:

Implementation of this program and its materials has been statewide.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs: None indicated
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None indicated

K. MATERIALS EVALUATION: Internal.

In addition, grant programs are evaluated.

L. SUMMARY OF ACTIVITIES TO DATE:

The approved budgetary allocation for the Interagency Environmental-Energy Education project was $150,000. Work is now taking place on the developmental phase of the project, and the following activities are expected to be concrete by June 30, 1980:

-- a complete K-12 grade-by-grade environmental education curriculum guide based on the County Superintendents' Course of Study. (Copies available from Alameda County Library, 685 A Street, Hayward, CA 94541).
-- an annotated catalog of materials and services available from state agencies, keyed to the curriculum guide.
-- a selection of materials for classroom use, based on the new guide; not a complete array, but a good cross section.

A working-planning session was held in mid-August, involving some 30 classroom teachers, curriculum developers, and resource management people. The group reviewed state textbooks, license plate grant, and resource agency materials, identified specific needs for development of new items, and worked on concepts and format for the K-12 curriculum guide. The group developed a topical cross-reference to the Course of Study goals so that specific items, such as water, energy, wildlife, air pollution, etc., would be adequately covered.

On September 26, a report was made to the Curriculum Commission which develops specifications and reviews materials for state adoption regarding the findings of the study group. The report noted that state adopted materials were rather weak in the environmental education area, particularly as they relate to lifestyle and problem solving. It was recommended that the five environmental education goals contained in the course of study be written into the specifications for new adoption as a way of improving the situation.

Negotiations are now underway to contract for the various products recommended by the planning conference participants. Classroom teachers will be involved in this work, and periodic review meetings will be scheduled for interagency committee members.

The department has mailed out applications for the License Plate grant program, and the guidelines emphasize the need for proposals which are compatible with the new course of study.

M. PLANS FOR THE FUTURE: Continuation and expansion

N. REPORT SUBMITTED BY: R. J. H. Schafer
October 3, 1979

Previous Directory References: 1972, 1973, 1975

ERIC DOCUMENTS:

ED 073 918	A Study: Conservation Education and the Western Textbook
ED 076 438	Ekistics: A Guide for the Development of an Interdisciplinary Environmental Education Curriculum
ED 099 207	Conservation and Environmental Education in Western States. Second Edition
ED 104 644	Resource Materials: A Guide to Production and Use
ED 166 031	Energy and Water: Conservation Suggestions for California's Elementary and Secondary Schools
ED 180 743	Course of Study for Grades Kindergarten through Twelve, 1975-1981

A. TITLE: CAPTAIN POWER ENERGY EDUCATION PROGRAM and
POWER QUIZ ENERGY EDUCATION PROGRAM

B. DIRECTOR: Ernest J. Roberson
Community Relations Supervisor
San Diego Gas and Electric Company
P.O. Box 1831
San Diego, CA 92112
714/232-4252

C. DESCRIPTORS: Conservation Education, Energy Education

D. HEADQUARTERS: 101 Ash
San Diego, Ca 92101
714/232-4252

SPECIAL FACILITIES FOR VISITORS TO SEE: None

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
Consultant - Fred C. Niedermeyer, Ed.D.; Implementation - San Diego City and County Schools Personnel

F. HISTORY:

1) Principal originators:
    San Diego Gas and Electric and the San Diego City/County Schools energy education committee task force
2) Date and place of initiation:
    1976 - San Diego, CA
3) Funding sources utilized:
    San Diego Gas and Electric
4) Overall purpose:
    Energy awareness and skills development for elementary level students

G. OBJECTIVES: See below

H. MATERIALS:

1) Materials produced: See below
2) Free materials available: See below
3) Materials purchasable: See below

4) New instructional materials being developed:
   Junior High School Level, Grade 8
5) Materials anticipated for development:
   High School Level (1980-81)
6) Commercial Association: See below

I. IMPLEMENTATION: Written into San Diego City Schools curriculum; also used in many other schools.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (one hour)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Actual materials and display boards

K. MATERIALS EVALUATION:

1) Evaluator:
   Teachers, consultants and company representatives
2) Pertinent published research on evaluation: See below
3) Unpublished research summary: See below

L. SUMMARY OF ACTIVITIES TO DATE:

A complete summary of this program is reported in: Niedermeyer and Roberson, "Captain Power and Power Quiz: Two Energy Education Programs," The Elementary School Journal 79:5 (May, 1979), 259-268.

M. PLANS FOR THE FUTURE:

As task force directs

N. REPORT SUBMITTED BY: Ernest J. Roberson
September 28, 1979

A. TITLE: HIGH TRAILS OUTDOOR EDUCATION PROGRAM

B. DIRECTOR: W. Eugene Carroll
Outdoor Education
Colorado Springs Public Schools
1115 North El Paso Street
Colorado Springs, CO 80903
303/635-6197

C. DESCRIPTORS: Consservation education, energy education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Health education

D. HEADQUARTERS: Florissant, CO 80816
303/687-9543

SPECIAL FACILITIES FOR VISITORS TO SEE:
Camp buildings, etc.; program - October, November, and March, April, and May

E. PRINCIPAL STAFF:

Varies: School District #11 - 10 each week
High Trails Staff - 25 each week

CONSULTANT SERVICES UTILIZED: None

F. HISTORY:

1) Principal originators:
   Colorado Outdoor Education Center (also called High Trails)
2) Date and place of initiation:
   Fall, 1964
3) Funding sources utilized:
   Only from the district
4) Overall purpose:
   To help students by offering programs which help each individual to gain a sense of the earth, a sense of community, and a sense of self.

G. OBJECTIVES:

Since 1948, from the founding of a summer camp program to the development of an integrated, multi-disciplinary curriculum for outdoor education, the content and teaching techniques utilized at Colorado Outdoor Education Center have undergone many changes. However, the basic goals of outdoor education at High Trails have remained the same. The Center attempts to educate the total person by offering programs which help each individual to gain a Sense of the Earth, a Sense of Community, and a Sense of Self.

A Sense of the Earth. By bringing the students into direct contact with nature, utilizing small groups and emphasizing direct experiences, A Sense of the Earth - of the natural world and man's role within it- is achieved. The curriculum presents concepts of ecology, conservation, life sciences and physical sciences along with the more traditional subjects of math, history, and creative writing and expression. This is done in such a way as to involve the students in learning and make maximum use of the resources of the out-of-doors.

> A Sense of the Earth is an important part of every discovery group from Time Machine with its development of geologic time through the study of mountain building forces and the evolution of plant and animal life on earth through Astronauts which seeks to emphasize the wonders of life on earth as well as the attitudes we must develop in order to maintain our planet. Each curriculum group, in its own way, strives to increase awareness, understanding and reverence for the world around us.

A Sense of Community. Students from varied backgrounds and life-styles live together during their week at High Trails. Through the friendships made and cooperative efforts undertaken, a tolerance and understanding of the wonderful diversity of man is developed as well as a Sense of the Community that is mankind.

> All aspects of the High Trails program are designed to teach a Sense of Community. This concept is also a part of every curriculum section from Pioneers which poses problems faced in a less technological society and seeks solutions based on cooperative efforts to Homesteaders, which demonstrates the interconnection between the life styles of the past and those enjoyed today, developing a feeling for the connection between all generations of man.

A Sense of Self. The opportunity to form a society by themselves, with interested and aware guidance, and to take their own place as individuals within this society teaches sixth graders a Sense of Self based on respect and consideration.

> From Entertainers which places a premium on individual expression and encourages variety in the interpretation of individual and group feelings, emotions, and relationships to Crafters which seeks to encourage creativity through a variety of mediums, the High Trails program is totally concerned with helping each individual to gain an improved understanding and concept of self.

H. MATERIALS:

1) Materials produced:
   Primary (K-6) -- Third Grade Zoo Mammal Tour Booklet; Fourth Grade Nature Walks; Sixth Grade Teacher's Field Guide - journals, newspapers, slide set; Fifth Grade Task Cards.
   Secondary (7-12) -- None
2) Free materials available: None
3) Materials purchasable:

Teacher's Field Guide	$10.00
Journal	1.00
Newspaper (set of 4)	1.00
Nature Walks	1.50
Zoo Mammal Tour	1.50
Task Cards for Grasslands Ecology (Send to Director)	3.00

4) New instructional materials being developed:
   Revision of fifth grade guide - Grassland Ecology
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 38
2) Teachers adopting all of the materials: 90%
3) Teachers using some of the materials: 10%
4) Total students using all of the materials. 13,221
5) Totals stated are definite.
6) Selected schools utilizing the program:

Longfellow
3302 Maizeland Road
Colorado Springs, CO 80909

Audubon Elementary
2400 East Van Buren
Colorado Springs, CO 80909

Carver
4740 Artistic Circle
Colorado Springs, CO 80917

Taylor
900 East Buena Ventura
Colorado Springs, CO 80907

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (one to two hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Materials listed above
6) Teaching materials commercially available:
   School District #11 - Instructional Services
   Colorado Outdoor Education Center, Florissant, CO 80816

K. MATERIALS EVALUATION:

1) Evaluator:
   Teachers and students
2) Pertinent published research on evaluation: None
3) Unpublished research summary:
   Evaluation only

L. SUMMARY OF ACTIVITIES TO DATE:

1. K-2 - Solar Trails Center

The Solar Trails Center programs have been enthusiastically received by both teachers and students. These programs are based on outdoor activities on 200 acres of wildland in Bear Creek Park. The building and facility are owned and operated by the El Paso County Park and Recreation District. With close cooperation, we have developed together programs in ecology, nature appreciation, man's role in the environment, and natural arts for our students. Trained docents lead the 50-60 students once or twice a week in the activity oriented investigations. Teacher workshops, docent training and pre- and post-activities are all part of the program.

This program correlates well with our science SAPA II and social studies curriculum.

2. Third Grade - Zoo Mammal Tour

The Third Grade Zoo Mammal tour is conducted by the zoo auxiliary in cooperation with our district. It works well with our science curriculum and the goals are:

To see the different animals of the zoo
To learn about the habits of the zoo animals
To learn of the care of animals of the zoo
To learn about the habitats of the zoo animals
To learn about conservation of wild animals

The Zoo Mammal tour is prefaced by a Classroom Safari, which is a 45 minute slide and touch program that really gets the students excited about their tour.

3. Fourth Grade - Nature Walks

This program is conducted through the two parks in Colorado Springs, Palmer Park and Garden of the Gods, in cooperation with the City Park and Recreation Dept. The purpose of the Nature Walks are:

To observe plants and animals in the Garden of the Gods or Palmer Park environments
To observe rocks in the Garden of the Gods or Palmer Park environments

To communivate ways to conserve the beauty of the Garden of the Gods or Palmer Park environments

A "Chief" (coordinator) is employed by the district along with 15-20 other guides and they coordinate the program. This again is an excellent outdoor program that helps students to become aware of the out-of-doors, broadens their environment appreciation, and they learn through discovery.

4. Fifth Grade - Grassland Ecology

This unit is in two parts and can be extended over several days if desired or completed in two days. Part I is an Ecology Tour at the Cheyenne Mountain Zoological Park. This is not the same tour as the third grade but it does take the information the students had received in the third grade and builds it into a broader knowledge of some of the principles of biology. The ecology tour includes a broader view of the animal kingdom with attempts to relate them as parts of a living, dynamic community. Added emphasis is made by including the new bird displays. This tour enables the students to compare native grassland dwellers (animals and birds) with their biological equivalents from other countries.

Part II is field studies on the grasslands. This part of grassland can be done on any site that provides space for the activities suggested. Many schools have access to ideal "grassland sites" whereas others may have to walk a short distance. This unit has a set of 60-75 'task cards' which are suggested activities any student can perform. Some tasks are easy and some are more advanced, but students are permitted to choose their activities. Teachers may add other tasks as they see the need. Students are able, through those activities, to collect, record, and interpret data on the grassland ecology. Many other learnings are achieved through this method of learning-by-doing.

5. Sixth Grade - One Week Residential Program - High Trails

This is a one week residential environmental program that includes all sixth graders. Each week students from high, medium and low economic groups are brought together for a week of environmental education. The development of an integrated, multi-disciplinary curriculum by Colorado Outdoor Education Center and School District 11 has been a focal point for each sixth grader during their week at High Trails.

This program is most popular for both students as well as parents. Parents have been most enthusiastic about this program as indicated in our Parent Evaluation. This is due to both the exerted effort of the High Trails staff and the help of each sixth grade teacher.

This program is constantly being re-evaluated and updated each year. Each sixth grade student, high school student and teacher that goes to High Trails has a chance to complete an evaluation form and to make suggestions or comments about the program. These suggestions and comments are then evaluated and used whenever possible.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: W. Eugene Carroll
November 13, 1979

Previous Directory References: 1972, 1973

ERIC Document:

ED 144 764 Colorado Outdoor Education Center Teacher's Field Guide

A. TITLE: COLORADO ENERGY AND MAN'S ENVIRONMENT (EME)

B. DIRECTOR: Jon Thompson
EME Program Director
2417 Warwick Lane
Colorado Springs, CO 80909
303/591-1662

C. DESCRIPTORS: Conservation education, energy education

D. NATIONAL HEADQUARTERS: Energy and Man's Environment
Suite 301
0224 S. W. Hamilton
Portland, OR 97201
503/226-7131

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Workshops and conferences

E. PRINCIPAL STAFF: 20 parttime

CONSULTANT SERVICES UTILIZED: Often use speakers, workshop leaders, "energy experts" and educators

F. HISTORY:

1) Principal originators:
   In Colorado, State Department of Education and the utilities of Colorado.
   The national program, Washington State Department of Education, Northwest Public Power Council, and local educators.
2) Date and place of initiation:
   1972, Seattle Washington; national program
   1976, Denver, Colorado; Colorado program
3) Funding sources utilized:
   Colorado program: Rocky Mountain Electric League; Colorado Association of Municipal Utilities and some government funds.
   National program: over 150 companies, industry
4) Overall purpose:
   To promote energy literacy; to help educators understand the nature and extent of the world and national energy dilemma, and its educational implications.

G. OBJECTIVES:

To help educators:
1) develop an understanding of the world, national and regional energy problems;
2) examine the implications of identified energy problems;
3) identify and examine problems and resources for energy education; and,
4) select and evaluate energy education experiences for classroom implementation.

H. MATERIALS:

Colorado EME uses the materials produced by the National EME

I. IMPLEMENTATION:

1) Schools using entire set of materials: 200
2) Teachers adopting all of the materials: more than 1,500
3) Teachers using some of the materials: same
4) Total students using all of the materials: not applicable
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Whiteman Elementary
451 Newport Street
Denver, CO 80220

Hamilton Jr. High
8601 East Darmouth
Denver, CO 80231

Lake County Intermediate School
Leadville, CO 80461

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshops (4 hours to 30 hours)
    Summer Institute (varies; 15 to 30 hours)
    Evening Classes (15 to 30 hours)
    One day or one and one-half day conference/workshop
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
    The materials available from National EME can be used in this manner.
6) Commercial outlet for the above:
    National headquarters of EME (see section D)

K. MATERIALS EVALUATION:

1) Evaluator(s):
    University of Oregon, Brigham Young University

2) Pertinent published research on evaluation: None
3) Unpublished research summary:
Several research articles and dissertations exist.

L. SUMMARY OF ACTIVITIES TO DATE:

The Colorado EME program increased by six times in 1978 in comparison to 1977, the first year. In 1978, 60 programs were conducted for nearly 1,700 participants. The emphasis was changed from general awareness and concentration along the heavily populated front range to a state-wide effort with strong curriculum implementation focus. Special attention is now being given to follow-up and support for participating school districts.

The committee has grown and has become more representative of the state population, urban and rural. The Colorado program is truly a "grassroots" effort.

An evaluation project is well underway to monitor the results of this work. Activity is taking place in several new projects and work is going on with the 4-H, State Office of Energy Conservation and several colleges and universities.

M. PLANS FOR THE FUTURE:

Additional workshops/conferences; curriculum development effort.

N. REPORT SUBMITTED BY: Jon R. Thompson
September 4, 1979

A. TITLE: BUREAU OF LAND MANAGEMENT, COLORADO STATE OFFICE

B. COORDINATOR: Felix Jimenez
Bureau of Land Management
Colorado State Office
Public Affairs (Room 700)
1600 Broadway
Denver, CO 80202
303/837-4481

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Natural/cultural resource sites
workshops
study guides

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: For the development of the activities guide

F. HISTORY:

1) Principal originators:
   Felix Jimenez
2) Date and place of initiation:
   1972
3) Funding sources utilized:
   Agency budget
4) Overall purpose:
   Awareness and appreciation of natural/cultural resources
   Involvement by public in land management decision-making

G. OBJECTIVES:

To promote awareness, knowledge, understanding and to motivate people to be involved/responsible for managing natural resources so the resources are conserved for future generations.

H. MATERIALS:

1) Materials produced:
   Primary and secondary levels:
   Learning About The Environment (pamphlet); All Around You -- An Environmental Study Guide; packages of puzzles, posters, pamphlets; slide program on safety around the mines and appreciation of mining history; Fitting Them In -- Wild Horse teacher/student package.

2) Free materials available:
   All of the above
3) Materials purchasable: None
4) New instructional materials being developed:
   For grade level 3 and up
5) Materials anticipated for development:
   Teacher's guides
6) Commercial associations: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 100-500
2) Teachers adopting all of the materials: 500-1000
3) Teachers using some of the materials: same
4) Total students using all of the materials: 50,000
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Evergreen Outdoor Lab
(Jeffco School)
Evergree, CO

Paonia High School
P.O. Box 49
Paonia, CO

Carmel Junior High School
1740 Pepperwood Drive
Colorado Springs, CO

Balarat-Denver
Public Schools

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (Two and one-half to three and one-half days)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   All mentioned before; please see section H-1.

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Several environmental and energy education workshops; development of mining safety/heritage program materials.

M. PLANS FOR THE FUTURE:

Development of videotape programs for classroom use; more teacher workshops; development of environmental study areas and site guides.

N. REPORT SUBMITTED BY: Felix Jimenez
Coordinator
November 6, 1979

A. TITLE: U.S. FISH AND WILDLIFE SERVICE REGION 6
ENVIRONMENTAL EDUCATION PROGRAM

B. ENVIRONMENTAL EDUCATION SPECIALIST:

Carol A. Lively
U. S. Fish and Wildlife Service
Denver Federal Center
P.O. Box 25486
Denver, CO 80219
303/936-1407

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources

ADDITIONAL DESCRIPTORS: Wildlife management, habitat preservation

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Not at the regional office, but area refuges and hatcheries have visitor centers, exhibits, outdoor classrooms available

E. PRINCIPAL STAFF:

In Region 6, approximately ten people devote 50% of their time to various environmental education projects on field stations.

CONSULTANT SERVICES UTILIZED: For workshops primarily. The agency is developing a new set of environmental education materials and guides with consultant help.

F. HISTORY:

1) Principal originator:
   Environmental education in the Fish and Wildlife Service began in the Minneapolis Region with consultant help of the Minnesota Valley Environmental Sciences Foundation. The "We Can Help" packet was the outcome.
2) Date and place of initiation:
   1970; Minneapolis Regional Office
3) Funding sources utilized:
   Normal Fish and Wildlife Service interpretation and recreation funds

4) Overall purpose:
Advancing public awareness, understanding and appreciation of ecosystems and benefits of their management for fish, wildlife and people. Environmental education in the Fish and Wildlife Service is not an end in itself, but a tool to be used in contributing to the solutions of resource problems.

G. OBJECTIVES:

Build skills, impart knowledge, attitudes about Fish and Wildlife Service management, ecosystems, wildlife need for habitat preservation, introduce environmental awareness, encourage use of Fish and Wildlife lands as learning centers.

H. MATERIALS:

1) Materials produced:
   (K-12) "We Can Help!" packet; many of the activities are oriented to secondary level.
   "Let the Real World Work for You" film; oriented to primary and secondary teachers.
2) Free materials available:
   One copy of "We Can Help!" Others available on request (leaflets, general brochures, "Let the Real World. . ." film)
3) Materials purchasable:
   From Jenny Publishing Company (see section H-6)
   "We Can Help!"
   User's Guide -- 24 guides -- $14.50
   Environmental Education Program Guides -- Set of 4, $4.00
   20% discount on orders of 20 or more
4) New instructional materials being developed:
   For grade levels K-12, majority aimed at 5,6,7 grades
5) Materials anticipated for development:
   micro-computer environmental education programs, workshop training materials.
6) Commercial association:
   Materials purchasable through --
   Jenny Publishing Company
   57 Queen Avenue
   Minneapolis, MN
   New materials are being developed under contract to the Fish and Wildlife Service through Consumer Dynamics, Inc.

I. IMPLEMENTATION:

For further information on number of teachers, students and schools using the material, contact:

Reference Manager
San Francisco Bay
Northwest Region
Box 524
Newark, CA 94536

Reference Manager
Tinicum National Environmental
Education Center
U.S. Fish and Wildlife Service
Philadelphia, PA

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program:
   Yes, depending on region and field stations
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshops (generally 3 days)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   None, other than what is contained in the packet. As new materials are developed, training materials will also be developed if needed.

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Specific stations and regional coordinators; no organized method; new materials will have evaluation instrument as part of contract.
2) Pertinent published research on evaluation: Not applicable
3) Unpublished research summary: Not applicable

L. SUMMARY OF ACTIVITIES TO DATE:

Activities have generally taken place on field stations, with schools using areas as outdoor classrooms. Fish and Wildlife Service efforts have been to train teachers in environmental education techniques in order that they may educate their students. A multidisciplinary approach has been taken with emphasis on habitat preservation and wildlife management. The interpretive information centers are structured to be educational as well as informational. The Regional Office has developed training workshops for Fish and Wildlife Service employees, distributed new activities and information, participated in planning station programs, encouraged inter-agency communications and programming, participated in new development programs and is participating in development of the new Fish and Wildlife Service materials.

M. PLANS FOR THE FUTURE:

1) Developing micro-computer programs for use in the interpretive information centers and with workshops to deal with important resource problems.
2) Developing a working model for environmental education on waterfowl production areas and similar wetlands areas (more emphasis on wetland areas).
3) Exploring environmental education options on fish hatcheries,
4) Dveloping environmental education leadership conference for youth -- includes development plans for Fish and Wildlife Service-owned Ranch "A", Beulah, Wyoming.

N. REPORT SUBMITTED BY: Carol Lively
November 20, 1979

A. TITLE: KEEP COLORADO BEAUTIFUL, INC.

B. DIRECTOR: Esther Simon
4260 East Evans
Denver, CO 80222
303/757-2272

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, population education, urban environmental education

ADDITIONAL DESCRIPTORS: Litter control education, solid waste education, beautification projects, recycling education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Handout materials on programs

E. PRINCIPAL STAFF: 1

F. PROJECT HISTORY:

1) Principal originators:
   Concerned citizens
2) Date and place of initiation:
   1968
3) Funding sources utilized:
   Primarily private contributions
   Two-year state litter control act contract
4) Overall objective:
   To serve as a coordinating agency through which citizens, public and private organizations and the state and local governments may work together for the beautification of Colorado.

G. OBJECTIVES:

Educate the public concerning the proper disposal of trash, and solid waste; and the conservation of natural resources through recycling programs, historic preservation, proper use of energy and water.

H. MATERIALS:

1) Materials produced:
   "Litter Monster" -- costumed individual who tells story relating to hazard to wildlife which is a direct result of litter; for primary grades.
   State Slide Show -- depicts Colorado scenes impacted by litter; for secondary grades.

"The Game" -- a problem solving simulation game which deals with community waste problems; for secondary through adult.

2) Free materials available:
   Brochures; films, slide show, litter bags, trash bags, the "Eco Bus", a mobile environmental education unit. Littercards available to be completed when reporting errant motorists littering. Keep Colorado Beautiful sends a comical reminder to offender.
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   Film for secondary grades
5) Materials anticipated for development:
   Films, brochures, manuals
6) Commercial association: None

I. IMPLEMENTATION:

Over a period of 12 years it would be hard to estimate the number of teachers, students and schools using the material.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (half day session)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: Yes

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Park Host Program -- Keep Colorado Beautiful (KCB) sponsored program for senior citizens to host state parks to encourage a clean environment.

Speakers Bureau -- speakers free of charge, available to all schools; also a curriculum aids to teachers.

Eco Bus -- a mobile environmental classroom; demonstrates educational approach to Colorado's litter problem is a major part of the answer. Emphasis placed on anti-litter; solid waste, and recycling information.

Litter Cards -- (see section H-2)

Clean Community System -- year round litter prevention and beautification program directed at attitudinal changes in the public, operating at the local level.

Trash Treasure Hunt -- National and statewide cleanup day where vouchers of merchandise are hidden in badly littered areas; 106 communities were participants in 1979.

M. PLANS FOR THE FUTURE:

Project 80 -- the 1980 Western Slope Project. Goals will be to implement five clean community systems; a program designed to attack the reasons for littering. Energy impacted communities will be targeted. The "Waste in Place" modular program will be introduced in the school systems.

N. REPORT SUBMITTED BY: Esther Simon
November 15, 1979

Previous Directory Reference: 1976

A. TITLE: SIXTH GRADE OUTDOOR EDUCATION PROGRAM

B. DIRECTOR: Leonard Nelson
10290 N. Huron Street
Denver, CO 80221
303/451-8889

C. DESCRIPTORS: Environmental education, outdoor education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 4

CONSULTANT SERVICES UTILIZED:
Northern Colorado Board of Cooperative Services

F. HISTORY:

1) Principal originators:
School District #12, Adams County, Colorado
2) Date and place of initiation:
Spring, 1973
3) Funding sources utilized:
School district funds only
4) Overall purpose:
See L (Summary)

G. OBJECTIVES:

See L (Summary)

H. MATERIALS:

1) Materials produced:
Handbook for Outdoor Education
2) Free materials available: None
3) Materials purchasable:
Outdoor Education Handbook, $5.00
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 22
2) Teachers adopting all of the materials: 70
3) Teachers using some of the materials:
4) Total students using all of the materials: 1,600
5) Totals stated are definite.
6) Selected schools utilizing program materials:

Cherry Drive Elementary
11500 Cherry Drive
Thornton, CO 80233

Cotton Creek Elementary
11100 Vrain Street
Westminster, CO 80030

Hillcrest Elementary
10335 Croke Drive
Northglenn, CO 80221

Westlake Village School
2800 W. 135th Avenue
Brownfield, CO 80020

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (varies depending on need)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The Outdoor Education Program was implemented as one of the program objectives for Environmental Education in District No. 12. This objective is:

> In order to provide the opportunity for more students to gain environmental concepts, significant environmental skills and attitudinal changes in relation to the environment, the Environmental Advisory Committee, with the assistance of the Environmental Education Coordinator and selected consultants, will install an Outdoor Education Program into the ongoing curriculum of the Adams County District No. 12 elementary schools at the sixth-grade level and coordinate its operation.
>
> Accordingly, during each school year each sixth-grade child will have the opportunity to participate in the District No. 12 Outdoor Education Program. This program includes three interrelated activities: urban education in downtown Denver, a resident program near Estes Park, and community involvement centered around the student's own school.

This Outdoor Education Program is designed to provide the following important and valuable experiences for school children:

1) dealing and living with other students
2) learning in the out-of-doors

3) applying knowledge and skills learned in the classroom
4) accepting responsibilities by being required to follow schedules, be prompt, clean dorm rooms, and set tables before meals
5) becoming aware of both the old and new, the positive and the negative aspects of a large city
6) experiencing success, even for so-called "low achievers"
7) working with high school students
8) developing a new rapport with their classroom teachers
9) gaining knowledge and understanding of the balance of nature from firsthand outdoor experience
10) gaining knowledge and understanding of ecological problems concerning man's pollution and misuse of the balance of nature
11) identifying ways and means of correcting ecological problems
12) creating an awareness of earth's beauty
13) being challenged through the use of interdisciplinary experiences to personal commitment for a new lifestyle conducive to maintain a quality environment
14) understanding utilization of federal resources
15) interacting and communicating within the community

The program includes three interrelated activities: urban education utilizing downtown Denver, a resident program, and community involvement centered around the student's own school.

1) The Urban Program

a) Description: Each student will spend a day in and around downtown Denver.

b) Objective: Each student will see both the desirable and undesirable aspects of the urban environment and will learn how he may have a positive influence on this environment.

c) Activities: The student will experience many facets of the urban environment.

2) The Resident Program

a) Description: Each student will spend four days out of the classroom at a resident facility. The student will study and learn while being outside rather than in the traditional classroom.

b) Objective: Each student will increase his knowledge and understanding of the balance of nature and problems concerning man and his natural environment.

c) Activities: The student will use the disciplines of math, science, social studies, language arts, fine arts, music and physical education in various classes and activities. These activities will include both cognitive and affective experiences.

3) The Community Program

a) Description:	Each student will analyze his own community in light of his experiences in the urban and resident environments.
b) Objective:	Each student will become aware of local environmental problems and their possible solutions by undertaking activities which will involve him/her in local environmental action activities.
c) Activities:	The students will undertake activities which will involve them in solving local environmental problems; this will include hearing local government officials relate the roie of government in local environmental action.

4) Student Outcomes

As a result of participating in the Outdoor Education Program students will experience the following outcomes:

a) improvement in interpersonal relationships
b) increased understanding of ecological, environmental, and historical concepts
c) development of a positive self-image and improved attitude toward school
d) greater acceptance of responsibilities
e) development of outdoor living and survival skills

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Leonard Nelson
December 10, 1979

A. TITLE: ROCKY MOUNTAIN NATIONAL PARK SUMMER SEMINAR PROGRAM

B. DIRECTOR: Jean Menning
Seminar Coordinator
Rocky Mountain National Park
Estes Park, CO 80517
303/586-2371 Ext. 226

C. DESCRIPTORS: Environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Rocky Mountain National Park

E. PRINCIPAL STAFF: 10

F. HISTORY:

1) Principal originators:
Dr. Beatrice Willard, with an Alpine Tundra Ecology Seminar sponsored by the Rocky Mountain Nature Association, Inc., the National Park Service, and Institute of Alpine and Arctic Research, the University of Colorado, and the Estes Park Chamber of Commerce.
2) Date and place of initiation:
1962; Rocky Mountain National Park, Colorado
3) Funding sources utilized:
The seminar program is self-supporting, with registration fees based on this concept. The 1979 fees for a one week session were $60.
4) Overall purpose:
The summer seminar program, through study of the natural and cultural history of the Park, promotes an awareness of "Through interpretation, understanding; through understanding, appreciation; through appreciation, protection." Sessions provide an opportunity to learn about the Rocky Mountain ecosystem, with the use of all senses stressed over mere identification. Natural resources of the Park are utilized to the fullest extent; lectures and slides are supplemental.

G. OBJECTIVES:

A learning experience (academically and emotionally), each seminar strives for a concentrated coverage of the subject, as well as a pleasurable time. (See F-4 above for more details.)

H. MATERIALS: Not applicable

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION:

The nature of the program is such that teacher preparation may be considered the seminar itself (ten one-week sessions) or workshops (three day winter ecology or autumn ecology).

K. MATERIALS EVALUATION: Not applicable

L. SUMMARY OF ACTIVITIES TO DATE:

History -- The idea to use Rocky Mountain National Park as an outdoor classroom for instruction in natural history dates back to the beginning of the interpretive program for the Park in the 1930's. Extended instruction in specific fields began in 1962, the outgrowth of alpine tundra research conducted in the Park by Dr. Beatrice Willard. Alpine Tundra Ecology, the first seminar, was conducted from June 25-29, 1962, and was sponsored by the Rocky Mountain Nature Association, Inc., the National Park Service, the Institute of Alpine and Arctic Research, the University of Colorado, and the Estes Park Chamber of Commerce. It was limited to 40 participants at the cost of $10.00 each. In 1963 it was expanded to three weeks, while in 1964 a week of geology was added, making it a four-week session.

Since then the number of courses has grown, with a total of ten one-week sessions offered the summer of 1976. Typical summer courses now range from Rocky Mountain Ecosystems to Developing Awareness Through Drawing; from Mountain Geology to Mountain Ecology; from Bird Ecology to Alpine Ecology. Both undergraduate and graduate credit have been offered for all courses from participating Colorado universities. Winter Survival and Autumn Ecology weekend seminars have recently broadened the seminar program.

Philosophy -- The summer seminar program, through study of the natural and cultural history of the Park, promotes and awareness of "Through interpretation, understanding; through understanding, appreciation; through appreciation, protection." The sessions provide an opportunity to learn about the Rocky Mountain ecosystem, with the use of all senses stressed over mere identification. Natural resources of the Park are utilized to the fullest extent; lectures and slides are supplemental. A learning experience (academically and emotionally), each seminar strives for a concentrated coverage of the subject, as well as a pleasurable time.

Staffing -- A Seminar Coordinator, hired by the Rocky Mountain Nature Association, Inc., handles all seminar transactions; selecting and scheduling of courses and professors; preparing and printing of brochure; mailing of brochure; writing news releases; handling registration; monitoring summer sessions; evaluating courses; and coordinating activities with participating universities. The job entails about 600-650 man hours per year (January-March: 225 hours; April-June: 200 hours; July September: 100 hours; October-December, 100 hours). The Seminar Coordinator reports directly to the Executive Secretary of the Rocky Mountain Nature Association, Inc., who oversees the actions and decisions of the Coordinator.

Instructors for the seminars are selected through an examination of applications, recommendations, and proposed syllabuses. A preliminary selection is made jointly by the Seminar Coordinator, Rocky Mountain Nature Association, Inc., Executive Secretary, and Park Superintendent. These are then discussed with representatives of participating universities. Final selection of courses/instructors is the prerogative of the Association.

Funding -- The seminar program attempts to be self-supporting with registration fees based on this concept. A minimum of $3,000. is allotted for the salary of the Seminar Coordinator, $550 is paid per instructor per week, with an additional $100 per week allotted for assistants and/or resource speakers. Should the program in any one year not prove self-sufficient, it is considered a "cost of aide" item and is covered by Rocky Mountain Nature Association, Inc. funding. The Association treasurer handles the financial transactions for the Seminar program; depositing of checks; payment of salaries, control of miscellaneous expenses.

Physical Facilities -- Seminar sessions are basically on-site studies, with indoor activities kept to a minimum. A building is available for use during slide programs or during inclement weather. As this facility is also used by other Park-oriented activities, it is reserved as early as possible.

Likewise, the seminars share a National Parks Service bus with interpretative programs, special visiting groups, and training sessions. This bus is free to such groups and is only used within a 25 mile radius of Estes Park. When the bus is not available, seminar transportion is by car pool, at the rate of 3¢ per mile.

Seminar students make their own accommodation and meal arrangements. They are encouraged to camp free at a rustic, secluded campground within the Park. This tent-only campground is reserved for registered seminar students and Park researchers only. Information on other Park campgrounds and local facilities is also made available.

University Participation -- For several years the summer seminars have been co-sponsored by Colorado State University and the University of Northern Colorado. Logistics are coordinated through the Center for Continuing Education (CSU) and the Center for Non-Traditional and Outreach Education (UNC). These centers aid the Rocky Mountain Nature Association, Inc., in instructor/course selection; determine the number of credit hours per seminar; and facilitate the obtaining of academic approval for new instructors. They follow standard university procedure in processing credit applications/grade reports after receiving same from the Seminar Coordinator.

Department heads of both universities are consulted when necessary; they and other interested faculty members are encouraged to participate in the Rocky Mountain Nature Association/University decisions regarding the summer seminar program.

Evaluation -- At the close of each seminar, courses and professors are evaluated by students using a standard university form. Informal comments regarding the seminar program itself are also obtained. The Seminar Coordinator monitors each session, filing a separate evaluation. All evaluations are analyzed by the Seminar Coordinator, the Executive Secretary of Rocky Mountain Nature Association, Inc., and the Park Superintendent. They are also sent to the individual instructors, to appropriate department heads, and to the university centers.

Operational Procedures

January: Brochures (2,500) are mailed to the active list, Colorado public schools, Colorado universities, professors, conservation agencies, public libraries, National Parks Service areas, and selected out-of-state schools and universities.

News releases regarding the program are sent on "extended coverage" basis, with local radio stations giving spot announcements.

Seminar instructors are sent a contract, an example of a student instruction sheet, a building/bus request and brochure.

February/March: Registrations processed by Coordinator, with mailing lists corrected as necessary.

April: Student packets prepared to be mailed no later than May 1. These include an introductory letter; a student instruction sheet as prepared by the professor (daily schedule, book lists, special equipment, detailed requirements and readings for credit students); Rocky Mountain Nature Association, Inc., brochure/application; accommodation information; camping information; Rocky Mountain National Park map; and tick/fishing/rodent fliers.

May: Prospective seminar instructors for the following summer initially contacted through individual letters and extended news coverage. Interested instructors are asked to submit to the Association by September 1 a proposed syllabus, course description, etc.

June/August: Seminar Coordinator monitors each session; handles credit applications, evaluations, grade reports.

September: Instructor/course proposals reviewed by Coordinator, Executive Secretary, Park Superintendent. Participating universities are consulted.

October: Selected instructors contacted to submit necessary paperwork for university accreditation and for brochure publication.

November/December: Brochure prepared for local printing. Instructors write own course descriptions and biographical sketches. University centers okay copy before it is submitted to printer. Mailing list is updated; envelopes addressed for brochures.

M. PLANS FOR THE FUTURE:

To continue the ten one-week seminar sessions each summer.

N. REPORT SUBMITTED BY: Jean Menning
September 5, 1979

A. TITLE: OUTDOOR EDUCATION LABORATORY SCHOOL
MT. EVANS and WINDY PEAK

B. DIRECTORS: James R. Jackson
Outdoor Education Laboratory School
Mt. Evans
Rural Route 5 -- Box 451
Evergreen, CO 80439
303/674-3633

and

Robert Cooke
Outdoor Education Laboratory School
Windy Peak
Box 435
Bailey, CO 80421

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education, urban environmental education.

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Conducted tours

E. PRINCIPAL STAFF:
Combined, the projects have 8 plus teachers

CONSULTANT SERVICES UTILIZED:
For the impact statement

F. HISTORY:

1) Principal originators:
   Teachers and administrators of Jefferson County school district; also citizens
2) Date and place of initiation:
   1956
3) Funding sources utilized:
   Primarily school district funds and tuition
4) Overall purpose:
   Environmental Education

G. OBJECTIVES: None indicated

H. MATERIALS:

1) Materials produced:
   Curriculum Guide (K-6); High School Leadership Program (7-12)

2) Free materials available: None
3) Materials purchasable:
   Curriculum guide ($15.00);
   Film about the program (price not set to date)
4) New instructional materials being developed:
   Revision of present materials
5) Materials anticipated for development:
   Constant revision and re-writing
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 91
2) Teachers adopting all of the materials: 485
3) Teachers using some of the materials: same
4) Total students using all of the materials: 6,600 per year (sixth grade students)
5) Totals stated are definate for I-1, I-2; estimated for I-4.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (on-going and some week-long residence)
   Summer institute (one week in residence)
   Evening Classes (one to three hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Activities guide and curriculum guide

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE: None given

M. PLANS FOR THE FUTURE: Yes

N. REPORT SUBMITTED BY: James R. Jackson
Principal
September, 1979

Previous Directory References: 1972, 1973

ERIC DOCUMENTS:

ED 024 484 Outdoor Education Curriculum Guide, Grade 6

A. TITLE: ENVIRONMENTAL EDUCATION K-12 PROGRAM FOR JEFFERSON COUNTY SCHOOLS

B. DIRECTOR: B. J. Meadows
Environmental Education Coordinator
1209 Quail Street
Lakewood, CO 80215
303/231-2385

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 1 full-time; 1 half-time

CONSULTANT SERVICES UTILIZED: Writers, artists, and people with general expertise in environmental education to complete aspects of program development.

F. HISTORY:

1) Principal originators:
   Jefferson County schools and a small grant
2) Date and place of initiation:
   1971
3) Funding sources utilized:
   Small grant from the U. S. Office of Environmental Education; after the first year, the school district has funded the project
4) Overall purpose:
   To develop and maintain a K-12 environmental education program for Jefferson County schools.

G. OBJECTIVES:

1) To increase student awareness and experience in a variety of environments
2) To develop problem solving skills that can be applied to developing solutions to environmental problems
3) To develop student skills in assuming responsibility for the environment

H. MATERIALS:

1) Materials produced:
    Primary (K-6) -- Environmental Strand of the Science Guide (joint effort with science department); New Moccasins on Open Space (joint effort with social studies department); Environmental units in the primary integrated curriculum.
    Secondary (7-12) -- Energy and/or Earth (joint development with the science department); Land Use and Environmental Geology (with science department); Technology and Me (with the science department); Prairie unit (with science department).
    Other materials -- EcoTrek Cards (with the science department); Environmental Directory
2) Free materials:
    Land Use and Environmental Geology Unit
3) Materials purchasable:
    New Moccasins on Open Space
    Environmental Science Guide
        Available from George Junata, Director of Elementary Curriculum, 1209 Quail Street, Lakewood, CO 80215
4) New instructional materials being developed:
        For the high school level
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 80
2) Teachers adopting all of the materials: Not applicable
3) Teachers using some of the materials: 1,500
4) Total students using all of the materials: 35,000
5) Totals stated are closely estimated.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshop (one week approximately)
    After school classes (1½ hours)
    Two day workshop for third grade teachers to give strategies and skills for teaching "New Moccasins" unit (approximately 200 teachers).

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

The following projects are in various phases of development:

-- Topic in Applied Science: Energy and/or Earth unit, Land Use and Environmental Geology, Technology and Me, will be field tested in 1980-81.
-- Prairie Unit: to be implemented in 1980-81
-- New Moccasins on Open Space: Currently implemented in half the schools. It will be completely implemented in all elementary schools in the fall of 1980.
-- Primary Integrated Curriculum: Currently being piloted in first grade classrooms in the district

The following programs are being maintained in the schools:

-- EcoTrek Experiences
-- Owl's Roost and Eagle's Nest
-- Contemporary American Issues, environmental emphasis
-- Contemporary Social Issues, environmental emphasis
-- Environmental Strand of Science program
-- Environmental Studies course

M. PLANS FOR THE FUTURE:

A new nine week unit "Foothills and Freeways" is being developed with the Social Studies Department.
It is hoped that an environmental education unit focusing upon global environmental issues at the senior high school level can be developed.

N. REPORT SUBMITTED BY: B. J. Meadows
November 21, 1979

Previous Directory Reference: 1973

ERIC Documents:

ED 138 538	What's the Use of Land? A Secondary School Social Studies Project
ED 161 753	Contemporary American Issues
ED 170 101	Environmental Education: River Policy and Procedures

A. TITLE: MacGREGOR RANCH ENVIRONMENTAL PROGRAM

B. DIRECTOR: Dr. Richard S. Casebeer
Director, Environmental Education
Northern Colorado Educational Board of
Cooperative Services
830 South Lincoln
Longmont, CO 80501
303/442-2197

C. DESCRIPTORS: Environmental education, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Historic museum

E.. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: Numerous teachers have contributed to the development of trail guides etc.

F. HISTORY:

1) Principal originators:
Richard S. Casebeer
2) Date and place of initiation:
1973; MacGregor Ranch
3) Funding sources utilized:
School district contributions; funds from trustees of MacGregor Estate, Larimer County C.E.T.A. funds
4) Overall purpose:
To develop and maintain the MacGregor Ranch as a site for environmental and historical activities.

G. OBJECTIVES:

Develop environmental awareness and concern in students using the ranch.

H. MATERIALS:

1) Materials produced:
Miscellaneous trail guides and resource materials dealing with geology, history and natural history of the ranch
2) Free materials available: None.
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION:

One day workshop is available

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The MacGregor Ranch is 1,400 acre site located near the town of Estes Park, Colorado. The ranch was left by the will of the late Muriel MacGregor to be preserved as a working cattle ranch for historical and environmental education purposes. The Northern Colorado Educational Board of Cooperative Services coordinates the use of the Ranch by the six school districts which are members of the board. The Ranch contains several historic buildings and numerous natural features. As part of the project, nature trails and trail guides have been developed. Teachers using the Ranch have received resource materials and in-service workshops.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Richard S. Casebeer
November 8, 1979

A. TITLE: GRASSLAND INSTITUTE

B. DIRECTOR: Edward E. Butterfield
17410 East Nichols Place
Parker, CO 80134
303/690-5019

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources

D. HEADQUARTERS: Grassland Institute
2239 East Colfax Avenue
Denver, CO 80206

E. PRINCIPAL STAFF: 8

F. HISTORY:

1) Principal originators:
   Lois Webster; Bill Merk; Paul Rechel; E. E. Butterfield
2) Date and place of initiation:
   October, 1975
3) Funding sources utilized:
   Grants from: Denver Audubon Society; Public Service Company; Wyoming Mineral; and ARCO
4) Overall purpose:
   Familiarize participants with the short-grass prairie, ecosystem and heighten awareness of the subtle interaction of prairie communities.

G. OBJECTIVES:

Field-oriented activities are designed to provide the participants the opportunity to:

-- understand the ecologic and humanistic factors that interface in the shortgrass prairie ecosystem;
-- recognize specific grassland management problems that are associated with current grazing practices, watershed operation, soil utilization, mineral extraction possibilities, predator and rodent control programs, and recreational pressures;
-- clarify personal viewpoints and values related to grassland ecosystem management;
-- interact with individuals who may possess divergent grassland ecosystem management viewpoints and values;
-- gain an appreciation for the biotic, cultural and societal milieu that is the contemporary American grassland.

H. MATERIALS: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION:

The nature of the program is such that teacher preparation may be considered attending an Institute workshop (one week in length) or a Summer Institute (one week in length).

K. MATERIALS EVALUATION: Not applicable

L. SUMMARY OF ACTIVITIES TO DATE:

The program of the Grassland Institute familiarizes participants with the short-grass prairie ecosystem and heightens awareness of the subtle interactions of prairie communities. The Institute blends the arts, sciences and humanities to form the basis for viewing the prairie. Man's role and impacts are also assessed.

The prairie has its own unique character and web of interactions between its plant and animal life. Early summer is one of the best times to investigate and enjoy the prairie.

Field trips led by qualified instructors are scheduled each day. Evening programs relate historical, cultural and artistic views of the paririe as well as its natural history.

The Institute is open to 40 individuals at least 18 years of age and in good physical health. Since the program is conducted from a primitive campground participants must be willing to live under such conditions. University credit is available through the University of Northern Colorado.

M. PLANS FOR THE FUTURE:

To continue the present program.

N. REPORT SUBMITTED BY: Edward E. Butterfield
November 11, 1979

A. TITLE: TALCOTT MOUNTAIN SCIENCE CENTER FOR STUDENT INVOLVEMENT, INC.

B. DIRECTOR:

Donald LaSalle, Ph.D.
Montevideo Road
Avon, CT 06001
203/677-8573

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, outdoor education, population education

D. HEADQUARTERS: Same as B.

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Visitors may tour the solar-heated chronobiology-appropriate technology building and outlying mountaintop laboratories by appointment only.

E. PRINCIPAL STAFF: 20

CONSULTANT SERVICES UTILIZED: None indicated

F. HISTORY:

1) Principal originators:
   Dr. Frank Driscoll, Superintendent of Schools, Dr. Donald LaSalle, Science Coordinator, and George Atamian, Science teacher in the Avon Public School System.
2) Date and place of initiation:
   1966 - Renovated Niki Missile Site at Talcott Mountain, Avon, CT.
3) Funding sources utilized:
   Private citizen and business donations, foundations, grants.
4) Overall purpose:
   To increase students' understanding and appreciation of the physical world.

G. PROJECT OBJECTIVES:

To provide exciting, hands-on activities in the following areas of science: ecology, astronomy, meterology, geology, computer, chronobiology, electronics, alternate energy sources.

H. MATERIALS:

1) Materials produced;
   Stillwaters: The Talcott Mountain Science Center Pond Life Guide; Cycles: The Story of Rainbow Dam Fishway; Space Science Involvement; Earth Resource Monitoring from Space; A Teacher's Guide to Air Conservation; Environmental Repair Kit; An Insolation Catalog for North New England; Pumped Storage Site Natural History Survey for Northeast Utilities, An insolation catalog for Southern New England and discussion of computational beam partitioning techniques.
2) Free materials available:
   Pamphlets describing general and special gifted programs taking place at the science center.
3) Materials purchasable:
   Differentiated Curriculum for Gifted and Talented in Science and Mathematics and any of the above listed materials.
4) New instructional materials being developed:
   Ongoing instructional materials are being developed by all departments (ecology, alternate energy sources, chronobiology, computer, geology, meterology, astronomy).
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 40 surrounding communities
2) Teachers adopting all of the materials: not applicable
3) Teachers using some of the materials: hundreds
4) Total students using all of the materials: hundreds
5) Totals stated are estimated
6) Selected schools where the program materials are being used:

Avon Public Schools
Avon, CT 06001

Burlington- Harwington
Public Schools
Harwington, CT

Southington Public Schools
Southington, CT

Simsbury Public Schools
Simsbury, CT

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1 hour)
   Summer Institute (5 to 15 days)
   Evening Classes (five sessions, two hours per session)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: Yes

K. MATERIALS EVAULATION:

1) Evaluator: None
2) Pertinent published research on evaluation: Not indicated
3) Unpublished research summary: Not indicated

L. SUMMARY OF ACTIVITIES TO DATE:
See H.2.

M. PLANS FOR THE FUTURE:

Expansion of curriculum, equipment, and research in all departments.

N. REPORT SUBMITTED BY: Donna Rand
Ecology Department
November 29, 1979

Previous Directory References: 1972, 1973

A. TITLE: SCHOOL SERVICES IN ENVIRONMENTAL EDUCATION

B. DIRECTOR: Leslie N. Corey, Jr.
Connecticut Audubon Society
2325 Burr Street
Fairfield, CT 06430
203/259-5606

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Connecticut Audubon Center is the nerve center of the society's education programs. The center houses a library and resources center, live animals, the Nature Store, exhibits, an auditorium, solar energy and organic garden demonstrations, facilities and special trails for the handicapped and much more.
Roy and Margot Larsen Sanctuary, in Fairfield, is adjacent to the Connecticut Audubon Center. This refuge contains 162 acres of woodland, meadows, wetlands, ponds and streams. Over six miles of maintained trails offer birders, hikers, budding naturalists, cross-country skiers, photographers . . . just about everyone. . .glimpses of wildlife and wildflowers, fresh air and solitude.

E. PRINCIPAL STAFF: 4

F. HISTORY:

1) Principal originators:
   Leslie N. Corey, Jr., Mrs. Pat Hocheman, Mr. Marshall Case
2) Date and place of initiation:
   1972
3) Funding sources utilized:
   private foundations; Office of Environmental Education, U. S. Office of Education
4) Overall purpose:
   To provide environmental education programs to schools

G. OBJECTIVES:

1) Provide opportunity for infusion of ecological and environmental concepts into existing curriculum; and,
2) to foster an understanding of and appreciation for the basic needs and role of all living things.

H. MATERIALS:

1) Materials produced:
   Volunteers' training manual in production
2) Free materials available: None indicated
3) Materials purchasable:
   The manual presently in production
4) New instructional materials being developed:
   Slides, tapes and instructional materials
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 25
2) Teachers adopting all of the materials: 200
3) Teachers using some of the materials: not applicable
4) Total students using all of the materials: 25,000
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Dr. Betty DelGiorno
Fairfield Public Schools
Fairfield, CT 06430

Phyllis Gustavison
School Volunteers Association of Bridgeport
1775 Reservoir Avenue
Bridgeport, CT 06510

Meadow School
Boggs Hill Road
Newtown, CT 06470

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (50 minutes to 100 minutes)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Contact Society for list of available materials

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Connecticut Audubon operates a variety of environmental education programs, both in-school and on field trips. We rely very heavily on highly trained volunteers to operate many programs in the schools. We also have professional staff that conduct teacher workshops, classroom programs, field trips and other services. All Audubon programs supply a variety of informational materials, classroom exhibits and props, live animals and experimental activities.

M. PLANS FOR THE FUTURE:

Expansion of services in alternative energy and lifestyle approaches. Additional professional staff to meet the growning demand for services.

N. REPORT SUBMITTED BY: Leslie N. Corey
November 24, 1979

A. TITLE: PROJECT OCEANOLOGY

B. DIRECTOR: Howard M. Weiss, Ph.D.
Project Oceanology
Avery Point
Groton, CT 06340
203/445-9007

C. DESCRIPTORS: Environmental education, marine education, natural resources

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:: Waterfront marine laboratory with running seawater system; oceanographic vessels and equipment.

E. PRINCIPAL STAFF:
3 year-round; up to 15 others for specific programs on a part-time basis

CONSULTANT SERVICES UTILIZED: For curriculum development; teacher training; and, adult education

F. HISTORY:

1) Principal originators:
   Teachers and administrators from 14 southeastern Connecticut school districts.
2) Date and place of initiation:
   September, 1972; Southeastern Connecticut
3) Funding sources utilized:
   ESEA Title III provided seed money to start Project; National Science Foundation, U.S. Office of Environmental Education, private foundations, ESEA Title IV and others have provided grant money for special projects.
4) Overall purpose:
   To enable students and adults to learn about their relationship to the marine environment through direct on-the-water experiences.

G. OBJECTIVES:

(See section F-4)

H. MATERIALS:

1) Materials produced:
   Secondary (7-12) --
   Investigating the Marine Environment: A Sourcebook
   A three volume, 1000 page book written for students and teachers containing model field studies, field procedures, laboratory experiments and classroom activities. ($15.00)
   Conflicts Along Our Seacoast: A five filmstrip set dealing with coastal zone management issues. ($75)
   Plants and Animals of Long Island Sound: An Identification Guide (at press)
2) Free material available:
   Brochure describing Project Oceanology
3) Materials purchasable:
   See list of materials described above. All can be purchased through Project Oceanology
4) New instructional materials:being developed:
   Grades 7-12 and college level materials
5) Materials anticipated for development:
   None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 14
2) Teachers adopting all of the materials: 120
3) Teachers using some of the materials: 500
4) Total students using all of the materials: 10,000/year
5) Totals stated are closely estimated.
6) Selected schools where the program materials are being used:
   Waterford Public Schools, Waterford, CT
   Montville Public Schools, Montville, CT
   Ledyard Public Schools, Ledyard, CT
   Groton Public Schools, Groton, CT

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (series of 3 hour workshops)
   Summer Institute (4 weeks, Monday through Friday, 9:00 a.m. to 3:00 p.m.)
   Evening Classes (10 weeks, 1 day per week, 3 hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: Yes

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Consultants through ESEA Title IV
2) Pertinent published research on evaluation:
   None indicated
3) Unpublished research summary:
   None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

Project Oceanology is a marine education center operated by 14 school systems in southeastern Connecticut. This center provides a fifty foot research vessel, several small boats, a wide variety of oceanographic equipment, and a waterfront laboratory so that high school students and the general public can study the marine environment through direct, on-the-water experiences. Throughout the school year, students from the participating schools come to Project Oceanology with their regular science, social studies and other classes to participate in one of the 20 model field studies offered at the Project.

These include studies of natural marine environments (wetlands, beaches, estuaries, gull rookeries, etc.), fisheries resources (bluefish, flounder, lobster, etc.), man's impact on the environment (sewage outfalls, oil spills, dredging, thermal discharges, etc.),,and social-historical issues (access, design, historical changes, etc.). Special after-school and summer programs are offered for high school students and for teachers, including a Masters degree program in marine studies for teachers accredited by Eastern Connecticut State College. Curriculum development as described in previous sections and adult education programs round out the activities. Over 10,000 people each year are involved in Project Oceanology programs.

M. PLANS FOR THE FUTURE:

Undergraduate programming for regional colleges and universities.

N. REPORT SUBMITTED BY: Howard M. Weiss
September, 1979

Previous Directory Reference: 1975

A. TITLE: ENVIRONMENTAL EDUCATION CENTER (EEC), A PROGRAM OF AREA COOPERATIVE EDUCATIONAL SERVICES (ACES)

B. DIRECTOR: Larry Schaefer
800 Dixwell Avenue
New Haven, CT 06511
203/562-9967

C. DESCRIPTORS: Energy education, environmental education, marine education, outdoor education, population education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Extensive curriculum resource library

E. PRINCIPAL STAFF: 3-4

F. CONSULTANT SERVICES UTILIZED:
Occasionally, for workshop leaders

F. HISTORY:

1) Principal originators:
   Larry Schaefer, Andy Carrano
2) Date and place of initiation:
   June, 1970; New Haven, CT
3) Funding sources utilized:
   Membership fees from local schools and school districts; Office of Environmental Education, ESEA Title IV Part C funds; contracts from the Connecticut Department of Environmental Protection; and, contracts from Connecticut Department of Education
4) Overall purpose:
   To develop a population of teachers and students who are aware of and concerned about the environment and its associated problems and who have the knowledge, skills, understanding, attitudes, motivation and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones.

G. OBJECTIVES:

1) To operate and continue development of an interdisciplinary multigrade Environmental Education Center;
2) to provide professional development workshops, courses and programs in environmental education;
3) to disseminate information on environmental education;
4) to continue leadership in curriculum modification and/or development in environmental education; and,
5) to develop increased local awareness, involvement and support for environmental education.

H. MATERIALS:

1) Materials produced:
    Earthwatch, Designing Environmental education into the curriculum Vol. I, Grades 3-5
    Earthwatch, Vol. II, Grades 6-8
    Eco-Kit, six audiotutorial units
    Land Use Decision Making Kit, 17 audiotutorial units for lay planners, college sutdents and high school environmental studies courses; newsletter "Osprey" (monthly) curriculum newsletter for teachers
    Introduction to Population, Environment and Society, a teacher's resource manual
    A Proposal for a K-12 Sequence of Environmental Education Competencies, a working paper.
2) Free materials available: None
3) Materials purchasable:
    Eco-Kit -- $30.00
    Land Use Decision Making Kit -- $200.00
    Introduction to Population, Environment and and Society -- $6.50
    Earthwatch -- Available from EDRS
4) New instructional materials being developed:
    A variety of environmental, marine, and energy materials for grades K-12
5) Materials anticipated for development:
    Earthwatch Vol. III
    Coastwatch
    Energywatch
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials; 50
2) Teachers adopting all of the materials: 400
3) Teachers using some of the materials: 800
4) Total students using all of the materials: about 24,000
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Amity Regional Junior High School
Ohman Avenue
Orange, CT 06477

East Haven Public Schools
87 Gerrish Avenue
East Haven, CT 06512

Stratford Public Schools
1000 East Broadway
Stratford, CT 06497

High Plains School
Orange Center Road
Orange, CT 06477

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshops (from 2 hours to 2 weeks)
   Evening classes (from 2 hours to 2 weeks)
   Minicourses
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers;
   See section H-1.

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

The Environmental Education Center (EEC) at ACES began its work to assist teacher, schools and communities in strengthening and developing their environmental education program. Since the EEC inception, our objectives have included

a) in-service training in environmental education;
b) coordinating and operating a teacher resource center;
c) assisting teachers and administrators in curriculum and program development;
d) information dissemination; and;
e) coordinating programs with other organizations, educational institutions and agencies.

Since the EEC serves in excess of 25 school districts, 250 schools, and 200,000 students, the Center has always provided programs at a school or teachers' readiness for change. This has involved a wide range of activities described in this report.

M. PLANS FOR THE FUTURE:

1) Cooperate with Far West Educational Laboratory in the development and pilot testing of a generic model for the implementation of environmental education;
2) more intensive implementation activities at the school building level; and,
3) curriculum development, *Energywatch*, *Coastwatch*, and *Earthwatch* Vol. III.

N. REPORT SUBMITTED BY: Larry Schaefer
September, 1979

Previous Directory References: 1973, 1975, 1976

ERIC Documents:

ED 090 063	An Introduction to Population, Environment, and Society: A Teacher's Resource Manual
ED 133 206	A Self-Educational Approach to Environmental Decision Making: Focus on Land Use
ED 133 207	A Citizen's Guide to Information on Land Use Decision Making
ED 133 208	Introduction to Land Use Decision Making Kit and Economics of Land Use (2 units)
ED 133 209	Maps--Map Reading and Aerial Photography (2 units)
ED 133 210	Geosystems and Land Use Decision Making and Open Space and Land Use Decision Making (2 units)
ED 133 211	Synthesis: Part I, Buildability
ED 133 212	Synthesis: Part II, Land Use Attractiveness
ED 133 213	Uplands and Land Use Decision Making
ED 133 214	Planning for People and Land Use Decision Making
ED 133 215	Cultural Systems and Land Use Decision Making
ED 133 216	Local Implementation and Land Use Decision Making
ED 133 217	State and Federal Implementation
ED 133 218	Hydrosystems and Land Use Decision Making
ED 133 219	Inland Wetlands

ED 133 220	Coastal Wetlands
ED 170 151	Earthwatch: Designing Environmental Education into the Curriculum, Volume I, Grades 3-5
ED 170 152	Earthwatch: Designing Environmental Education into the Curriculum, Volume II, Grades 6-8
ED 180 806	A Proposal for a K-12 Sequence of Environmental Education Competencies, ACES Working Paper No. 1

A. TITLE: CONFLUENT ENVIRONMENTAL EDUCATION

B. PROJECT COORDINATOR: Ms. Marie Iannazzi
Board of Education
Administration and Service Center
105 Main Street
Norwalk, CT 06852
203/847-0481

C. DESCRIPTORS: Conservation education, energy education, environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 20

CONSULTANT SERVICES UTILIZED: Yes

F. HISTORY:

1) Principal originators:
   Dr. Muriel Gerhard
2) Date and place of initiation:
   July, 1976
3) Funding sources utilized:
   Department of Health, Education and Welfare, and local
4) Overall purpose:
   Teacher and student involvement and awareness of environmental problems to lead to student action

G. OBJECTIVES:

To provide teachers, students and community with an in-depth knowledge of environmental issues to enable them to become involved in dealing positively with such issues.

H. MATERIALS:

1) Materials produced:
   Secondary (7-12) -- specific environmental units infused directly into middle and high school science curriculum. And, community courses geared to layman's interest in environmental issues.
2) Free materials available: None indicated
3) Materials purchasable: None indicated
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 7
2) Teachers adopting all of the materials: 12
3) Teachers using some of the materials: 10
4) Total students using all of the materials: 1,200
5) Totals stated are estimated, as of 1977-78.

J. TEACHER PREPARATION:

Other than an Outdoor Education workshop, teacher preparation is not applicable as of 1979.

K. MATERIALS EVALUATION: Internal; teachers and students

L. SUMMARY OF ACTIVITIES TO DATE:

The project activities continue in a practical vein:

-- Natural Resource workshops for teachers from our local nature center
-- "Youth for a brighter tomorrow" programs
-- Energy audits conducted by high school students

M. PLANS FOR THE FUTURE:

1) Community adult program in environmental issues continues.
2) Confluent program has changed to a lecture series on environmental issues presented by a college professor to our advanced students and teachers.

N. REPORT SUBMITTED BY: Marie Iannazzi
September 5, 1979

A. TITLE: RAGGED HILL WOODS STUDENT ENVIRONMENT CENTER

B. DIRECTOR: James Pepe
Route 1 - Box 162
Pomfret Center, CT 06259
203/974-1122

C. DESCRIPTORS: Conservation education, natural resources, outdoor education, environmental education

D. HEADQUARTERS: Brooklyn School
Gorman Road
Brooklyn, CT 06234
203/774-9153

E. PRINCIPAL STAFF: 3

F. HISTORY:

1) Principal originators:
   4-H; University of Connecticut Extension Service; Title IV, part C, grant.
2) Date and place of initiation:
   August, 1976
3) Funding sources utilized:
   Federal grant through local schools, public and private
4) Overall purpose:
   To enrich the exisiting curricula and to provide field trips.

G. OBJECTIVES:

Interdisciplinary learning

H. MATERIALS: None

I. IMPLEMENTATION:

1) Schools using entire program: 22
2) Teachers adopting entire program: 400
3) Teachers using some of the program: none
4) Total students using all of the program: 10,000
5) Totals stated are estimated
6) Selected schools where the program is being used:

Pomfret Community School RFD Pomfret Center, CT 06259	Eastford Elementary School RFD Eastford, CT 06242

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    - Workshop (full day)
    - Summer Institute (3-credit, graduate class at Eastern Connecticut State College)
    - Evening Classes (3-credit, 15 class meetings in the spring)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
    A pre-service program is available to over 180 student teachers from Eastern Connecticut State College and the University of Connecticut interns.

K. MATERIALS EVALUATION:

1) Evaluators:
    State Department of Education, Hartford, Connecticut;
    Title IV on-site evaluation 1977-79
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

The Center, Windham-Tolland 4-H Camp in Pomfret, is comprised of 260 acres of ponds, streams, wetlands, forest and field. It also borders the 380 acre Dennis Farm Preserve of the Nature Conservancy. An inventory of teaching resources on site included the following: deer, an active beaver colony, otter, fox, 137 species of birds and assorted other smaller wildlife. Earth science investigation opportunities include stream deposition and evidence of glaciation. Also available are historical remains of old farm houses.

Ragged Hill Woods was established in 1975 as a unique Environmental Education Center. The uniqueness stems from the involvement of student teachers from the University of Connecticut and Eastern Connecticut State College as instructors to small groups of children (teacher-pupil ratio 1:10) under the guidance of experienced professional staff.

The lesson design is strongly committed to the ideals of experiental-inquiry learning. Lesson content, process application, and on-going evaluation are influenced by teacher input. It is the purpose of this center to provide meaningful, quality educational experience which meet a critical need in the curriculum.

The need that is addressed is ecological awareness. Our children will inherit a complex world, perhaps beset with many shortages of natural resources. A basic understanding of environmental concepts will better prepare them to deal with issues which will effect the quality of life in Eastern Connecticut for years to come.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: James Pepe
September 3, 1979

A. TITLE: EDUCATORS VIEW THE ENVIRONMENT (EVE)

B. DIRECTOR: Carla G. McGenney, Science Coordinator
Westport Teachers' Center
150 Riverside Avenue
Westport, CT 06880
03/227-8451 Ext. 882

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED: ACES -- New Haven; Schooner -- New Haven; Westport YMCA; Project Learning Tree.

F. HISTORY:

1) Principal originators:
    Philip Woodruff, Velma Heller, Nancy Roach, Bill Puterbaugh, Fred Bump, Carla McGeeney
2) Date and place of initiation:
    July, 1977; Westport Teachers' Center
3) Funding sources utilized:
    School-funded
4) Overall purpose:
    -- Guidelines for overnight field studies
    -- Infusion activities

G. OBJECTIVES:

To encourage teachers from all disciplines to invorporate environmental education concepts in their subject areas.

H. MATERIALS:

1) Materials produced:
    Primary (K-6) -- infusion activities for science, social studies and language arts
    Secondary (7-12) -- infusion activities for science, social studies and English
    Other -- handbook and guide for taking students on overnight field studies, do's/don'ts, cost, insurance and medical forms.
2) Free materials available: None indicated
3) Materials purchasable: None indicated
4) Materials anticipated for development: None

5) Materials anticipated for development:
In conjunction with ACES--Environmental Education Center, we hope to develop more activities
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 5
2) Teachers adopting all of the materials: 20
3) Teachers using some of the materials: 50
4) Total students using all of the materials: 200
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Bedford Junior High School
Riverside Avenue
Westport, CT 06880

Green Farms Elementary School
Morningside Drive
Westport, CT 06880

Burr Farms Elementary School
Burr Road
Westport, CT 06880

Colegtown Junior High School
North Avenue
Westport, CT 06880

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (3-hour; full day; 2 day field experience)
   Summer Institute (varies; 3 weeks)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Handbook, Project Learning Tree Guides, infusion units

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

As of June, 1979, five of nine schools in Westport have active environmental education programs. Staples High School offers an interdisciplinary course given by the science and social studies departments (2 credits).

Two junior high schools conducted a 5-day overnight field study program. The third junior high school offered a quarter-year optional course in environmental education.

Two elementary schools took a three day overnight field studies trip.

Forty teachers, 1 through 12th grades, attended envrionmental education workshops to receive instruction on infusing activities into the present curriculum.

Our program consists of over 150 infusion activites, a history of Westport's Environmental Education program, resource guide, role of the field studies program and environmental concepts.

M. PLANS FOR THE FUTURE: Yes

N. REPORT SUBMITTED BY: Carla G. McGeeney
Science Coordinator
September 18, 1979

A. TITLE: DELAWARE NATURE EDUCATION SOCIETY, INC.
ENVIRONMENTAL FIELD STUDIES

B. FIELD STUDY COORDINATORS: Sally Robinson and Ann Rydgren
Box 700
Hockessin, DE 19707
302/239-2334

C. DESCRIPTORS: Environmental education

D. HEADQUARTERS: Delaware Nature Education Society (DNES)
Norman Wilder, Executive Director
Ashland Nature Center
Box 700
Hockessin, DE 19707
302/239-2334

E. PRINCIPAL STAFF: 6, plus 40 volunteers

F. HISTORY:

1) Principal originators:
   Junior League, Charles Mohr
2) Date and place of initiation:
   1966; Brandywine Creek State Park
3) Funding sources utilized:
   Junior League; Delaware Nature Education Society (sponsoring organization); state funds; school district contracts.
4) Overall purpose:
   Environmental awareness and concern.

G. OBJECTIVES:

Involving students in an environmental education experience that culminates in the attitude that conservation (wise use) of the earth's resources is a necessity for all people.

H. MATERIALS:

1) Materials produced: None indicated
2) Free materials available:
   Annual Program listing of Environment Field Studies
3) Materials purchasable: None indicated
4) New instructional materials being developed: None indicated
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Teachers using some of the materials: approximately 600
2) Total students using the materials: 14,600
3) Totals stated are definite.
4) Selected schools which participate in the program:

Mrs. B. DesJardins
Fairville School House
Fairville Road
Chadds Ford, PA 19317

Mr. Patrick Devlin
Martin Luther King, Jr.,
Elementary School
Claymont and Todd's Lane
Wilmington, DE 19802

Mrs. Merriman
Avon Grove Elementary School
State Road
West Grove, PA 19390

Mrs. D. Winsley
Smyrna High School
Smyrna, DE 19977

J. TEACHER PREPARATION:

Summer Institute, four weeks in length

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Over 20,000 school children participate annually in DNES's Environmental Field Studies for grades k-12. Taught by volunteer naturalists and staff, the school programs are designed to supplement and reinforce classroom instruction through direct encounters with nature. A listing of programs is available.

For college students and graduates, DNES offers internships to those interested in developing professional skills in environmental education or communications. The intern is regarded as a staff member and becomes involved in the Society's many operations.

School teachers may participate in a University of Delaware graduate course -- Environmental Field Studies Workshop -- conducted at the Ashland Nature Center during the summer.

A feature of DNES's education efforts is its membership programs. Offered on a seasonal basis to ages 3 through 18 as well as adults and families, the programs are designed to be fun and educational. Most of the programs are conducted locally, but a number of extended out-of-state trips to outstanding natural areas are available from Maine to Florida. Participants learn not only to enjoy the outdoors but to be aware of the environment around them. Other membership bonuses are spaces for gardens and beehives.

On Saturdays, DNES frequently conducts Public Family Programs, covering the many facets of nature, and special events such as a nature crafts fair, harvest day, and winterfest. Fund-raising projects, educational workshops, and conferences are held throughout the year.

Programs for the handicapped, senior citizens, scouts, and other groups are available. Special career guidance counseling for teenagers is also available.

M. PLANS FOR THE FUTURE:

A farm program is planned.

N. REPORT SUBMITTED BY: Ann Rydgren
September 25, 1979

A. TITLE: PROJECT COAST (COASTAL AND OCEANIC AWARENESS STUDIES)

B. DIRECTOR: Dr. Les Picker
College of Education
University of Delaware
Newark, DE 19711
302/738-1165

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, outdoor education, population

D. HEADQUARTERS: College of Education
University of Delaware
Newark, DE 19711
302/738-2184

SPECIAL FACILITIES FOR VISITORS TO SEE:
Project COAST Curriculum Center

E. PRINCIPAL STAFF: Varies from two to four

CONSULTANT SERVICES UTILIZED: State agencies, nationally prominent marine educators

F. HISTORY:

1) Principal originators:
   Dr. Robert Stegner, College of Education, University of Delaware
2) Date and place of initiation:
   1970; the University of Delaware in the College of Education under the name of Marine Environment Curriculum Study, later became Project COAST in 1976
3) Funding sources utilized:
   NOAA Sea Grant Program, U.S. Office of Education, DuPont Company, National Science Foundation under the DelMod System, Office of Coastal Zone Management, and University of Delaware.
4) Overall purpose:
   To increase the marine awareness of school children and teachers through multidisciplinary marine education.

G. OBJECTIVES:

1) Prepare interdisciplinary, activity-oriented marine education infusion units.
2) Increase marine awareness of school populations.

H. MATERIALS:

1) Materials produced:
   Too numerous to list; 85 units of instruction have been developed to date. A major revision of all units is planned in 1980. Units are used in K-12 classrooms. Tests for grades 4, 8 and 11; posters and special reports have been developed also.
2) Free materials available:
   List of units available in Project COAST (annotated).
3) Materials purchasable:
   List available from headquarters
4) New instructional materials being developed:
   For grades K-12
5) Materials anticiapated for development:
   Newsletter for curriculum users, revised units of instruction, poster sets, others.
6) Commercial association: None

I. IMPLEMENTATION:

No data has been kept on numbers of schools, teachers and students using part of or all of the materials. Below are listed selected schools which were participating in 1976-77:

Baltimore County Schools
Mr. John Heck
6901 North Charles Street
Towson, MD 21204

Cape Henlopen School District
Mr. Robert Mercer
Nassau, DE 19969

Cecil County Public Schools
Mr. Richard Lonie
Booth Street Center
Elkton, MD 21921

Manasquan Public Schools
Mr. Robert D. Elder
Manasquan, NJ 08736

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education: Yes
3) Pre-service training program: Yes, with methods course
4) Kinds of preparation programs:
   Workshop (varied in length)
   Summer Institute (varied in length)
   Evening classes (varied)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   None at the present time.

K. MATERIALS EVALUATION:

1) Evaluator(s): Not indicated
2) Pertinent published research on evaluation: None
3) Unpublished research summary:
   Abstract, Evaluation of Marine Environment Studies, 1976

L. SUMMARY OF ACTIVITIES TO DATE:

Formulate a Conceptual Scheme for Marine and Coastal Environment Studies which forms the basis for 85 units of instruction at K-12 levels now being marketed at duplication costs to educators, mainly in the US. Produce an experimental marine environment awareness test, based on the Scheme, for grades 4, 8 and 11, and collect data.

Publish four annotated bibliographies on children's books, periodicals, curriculum materials and audio-visual aids.

Collect and maintain a resource center of curriculum materials for students and teachers.

Conduct workshops and disseminate curriculum materials in Delaware schools and in selected schools in Maryland, New Jersey and Virginia.

M. PLANS FOR THE FUTURE:

We anticipate revising and updating all existing materials. A careful evaluation plan will be built into the program. Increased curriculum implementation services will be available to pre-service and in-service teachers.

N. REPORT SUBMITTED BY: Dr. Les Picker and Ms. Fran Price
September 25, 1979

ERIC Documents:

ED 141 140	Language Arts Activities to Supplement COAST Learning Experiences
ED 141 141	Water for Fun
ED 141 142	Ships and Seaways
ED 141 143	The Muskrat, the Not-So-Common Oyster, the Horseshoe Crab, the Blue Crab
ED 141 144	Ships through the Ages
ED 141 145	Where Have All the Menhaden Gone?
ED 141 146	Utilization of Estuarian Organisms by the Indians
ED 141 147	The "RA" Expeditions
ED 141 148	The Moon, the Sun, and Tides
ED 141 149	What is Physical Oceanography?

ED 141 150	Microfossils from the Local Environment
ED 141 151	Air and Life
ED 141 152	Observing Starfish--the Water Vascular System
ED 141 153	The Rocky Shore
ED 141 154	A Comparative Study of Clam and Squid. Biting Flies of the Coastal Region. Diatoms: Nature's Aquatic Gems
ED 141 155	Marshes: Nature's Bounty
ED 141 156	Sea Floor Spreading
ED 141 157	Economic and Political Exploitation of Marine Resources
ED 141 158	Pesticides and the Marine Environment
ED 141 159	The Ocean: Source of Nutrition for the Future
ED 141 160	Measuring Dissolved Oxygen Quantitatively. Collecting and Cultivating Marine Bacteria. To Recognize, Record, and Analyze Characteristics of a Sandy Beach Environment. Quantitative and Qualitative Analysis of Phosphate in Water
ED 141 161	Salinity Changes in a Tidal River
ED 141 162	Simulation Game: Superport
ED 141 163	Energy for 1970-1990
ED 141 145	Thermal Pollution by Nuclear Power Plants
ED 156 541	A Statement on the Need for Marine and Aquatic Education to Inform Americans about the World of Water
ED 164 310	Americans and the World of Water
ED 179 442	A Catalog of Curriculum Materials for Marine Environment Studies--Elementary and Secondary
ED 179 443	A List of Books on the Marine Environment for Children and Young People

A. TITLE: SCIENCE, ENERGY AND ENVIRONMENT (SEE)

B. DIRECTOR: L. Jim Allen
Appoquinimink School District
Corbet School
Odessa, DE 19730
302/378-9845

C. DESCRIPTORS: Conservation education, energy education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: State Supervisor, Michigan State Energy Department, Delaware State Energy Office personnel; and, 23 teachers throughout the state to write the curriculum.

F. HISTORY:

1) Principal originators:
   Jim Allen; Dr. Douglas MacBeth
2) Date and place of initiation:
   March, 1978; Appoquinimink School District
3) Funding sources utilized:
   ESEA, Title IV, part C, funds
4) Overall purpose:
   To foster an awareness and consciousness of energy conservation in selected school systems throughout the state through the implementation of a comprehensive curriculum program.

G. OBJECTIVES:

The Appoquinimink School District Project SEE, field tested and evaluated the curriculum "Thinking about Energy, K-12" in three selected school systems (public and private) during the 1978-79 school year.

H. MATERIALS:

1) Materials produced:
   "Thinking about Energy" (Elementary level, K-6)
   "Thinking about Energy" (Secondary level, 7-12)
2) Free materials available: None
3) Materials purchasable:
   "Thinking about Energy" (k-12), available from Mr. John Cairns, State Science Supervisor, Department of Public Instruction, Townsend Building, Dover, Delaware 19901.
4) New instructional materials being developed: None

5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 8
2) Teachers adopting all of the materials: 19
3) Teachers using some of the materials: 3
4) Total students using all of the materials: 1,058
5) Totals stated are definite.
6) Selected schools where the program materials are being used:

Clayton Elementary School
Smyrna School District
Clayton, DE 19938

St. John the Beloved School
905 Milltown Road, Sherwood Park
Wilmington, DE 19808

Smyrna North Elementary
Smyrna School District
Main Street Extension
Smyrna, DE 19977

Silver Lake Elementary School
South Catherine Street
Middletown, DE 19709

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshop (three hours)

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

Three school districts were selected in the state and had the curriculum materials field tested there. First, an all day in-service program with the teachers was done, then an on-site monitoring visit and discussion of teacher evaluation. A follow up workshop and compiling of evaluation. A final report was written.

M. PLANS FOR THE FUTURE:

To revise the curriculum materials.

N. REPORT SUBMITTED BY: Jim Allen
September 4, 1979

A. TITLE: CURRICULUM MODIFICATION THROUGH ENVIRONMENTAL STUDIES

B. DIRECTOR: Frank Pittman
2900 N. E. Indian River Drive
Jensen Beach, FL 33457
305/334-1262

C. DESCRIPTORS: Energy education, environmental education, marine education, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE:
Museum and wet lab; open salt water system and tanks

E. PRINCIPAL STAFF: 5

F. HISTORY:

1) Principal originators:
Ella Clark, Olive Ashby
2) Date and place of initiation:
August, 1972
3) Funding sources utilized:
ESEA Title IV, part C
4) Overall purpose:
To provide environmental education from pre-school through the adult community.

G. OBJECTIVES:

1) To provide a fully structured and implemented program of environmental studies, K-12;
2) to create an environmentally knowledgeable citizenry to insure intelligent decisions in the field of human environment; and,
3) to provide a regional center for the production, collection, study and dissemination of environmental data and study methods.

H. MATERIALS:

1) Materials produced:
Teacher and student booklets for each grade level (k-8) with accompanying slide/tape programs for each level: K -- Your Environment; 1 -- Habitats; 2 -- Communities; 3 -- Grassflat Communities; 4 -- Mangrove Communities; 5 -- Ecosystems; 6 -- River Investigations (Physical factors); 7 -- Spoil Island Investigation; 8 -- Beach Investigation.
2) Free materials available:
Program overview, a brief description of K-8 programs.

3) Materials purchasable:
   Materials can be purchased at cost by individual grades or by complete set. Slide/tape may be purchased separately. Teacher/student sets: $20.00 for complete set. Slide/tape set: $200.00 for complete set.
4) New instructional materials being developed:
   Math Outdoors, grade levels 4-12
5) Materials anticipated for development:
   Energy curriculum materials
6) Commercial associations: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 20
2) Teachers adopting all of the materials: 100
3) Teachers using some of the materials: 300
4) Total students using all of the materials: 10,000
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Highland View Elementary School
Port St. Joe, FL 32456

White City Elementary School
Ft. Pierce, FL 33450

Palm City Elementary School
Palm City, FL 33480

St. Michael's School
1300 E. 10th Street
Stuart, FL 33494

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (one day)

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Joint Dissemination Review Panel US Office of Education, Individual adopters
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

The environmental Studies Center was established in August, 1972, under the ESEA Title III program to develop innovative teaching methods. The Center staff has developed a field oriented sequential program of environmental studies for kindergarten through 8th grade and special programs for grades 9 through 12. The studies are centered around the Indian River Lagoon and nearby ocean beach.

Along with regular k-12 curriculum the center offers a wide range program of community education which includes lecture and film series, seminars and field trips that are open to the general public. Thru a series of adopter grants offered by the Florida Office of Educational Innovations, ESEA Title IV, part C, the Center maintains an on-going program of teacher training for other school systems in Florida. The State of Florida Office of Environmental Education and State Energy Office have awarded mini-grants to the Center which are being used to develop outdoor mathematics programs, energy curricula and an energy activitiy center.

The Environmental Studies Center is located on a 4.5 acre riverfront site and offers three classrooms - laboratories, museum, we-lab and auditorium. The center staff also operates a 30-foot survey boat for in-depth studies of the river environment. At the present time the facilities and local programs are entirely funded by the Martin County School Board.

M. PLANS FOR THE FUTURE:

More activites in energy education; marine science programs for all grades.

N. REPORT SUBMITTED BY: Frank Pittman
Teacher
November 13, 1979

Previous Directory References: 1973, 1975, 1976

ERIC Documents:

ED 142 427	Kindergarten--Your Environment
ED 142 428	1st Grade--Habitats
ED 142 429	2nd Grade--Communities
ED 142 430	3rd Grade--Grassflat Communities
ED 142 431	4th Grade--Mangrove Communities
ED 142 432	5th Grade--Ecosystems

ED 142 433	6th Grade--River Investigation
ED 142 434	7th Grade--Spoil Island Investigation
ED 142 435	8th Grade--Beach Investigation

A. TITLE: ECO-PLAYS

B. DIRECTOR: S. Earl Watts, Principal
Columbia County Kindergarten Center
West Leon Street
Lake City, FL 32055
904/752-6672

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE:
Amphitheatre

E. PRINCIPAL STAFF:
25 teachers, 28 aides

CONSULTANT SERVICES UTILIZED:
Florida Department of Education; Mr. Witt, Director of Outdoor Drama

F. HISTORY:

1) Principal originators:
   Kindergarten staff
2) Date and place of initiation:
   1975-76; Columbia County Kindergarten Center
3) Funding sources utilized:
   Environmental Education mini-grant; school budget
4) Overall purpose:
   To merge play acting with environmental education

G. OBJECTIVES:

To produce and field test eight ecology plays
To construct amphitheatre for productions

H. MATERIALS:

1) Materials produced:
   Eco-Plays -- Florida Department of Education
2) Free materials available: Same as H-1.
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

Number of schools, teachers and students using the material is unknown.

J. TEACHER PREPARATION: Not indicated

K. MATERIALS EVALUATION: None indicated

L. SUMMARY OF ACTIVITIES TO DATE: Not indicated

M. PLANS FOR THE FUTURE: None indicated

N. REPORT SUBMITTED BY: S. Earl Watts
November 7, 1979

A. TITLE: MODEL ENVIRONMENTAL LEARNING TREE

B. DIRECTOR: S. Earl Watts, Principal
Columbia County Kindergarten Center
West Leon Street
Lake City, FL 32055
904/752-6672

C. DESCRIPTORS: Environmental learning through creative play

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE:
Outdoor playground development

E. PRINCIPAL STAFF:
25 teachers, 28 aides

CONSULTANT SERVICES UTILIZED: Florida Department of Education

F. HISTORY:

1) Principal originators:
   Columbia County Kindergarten Center classroom teachers
2) Date and place of initiation:
   1975-76; Columbia County Kindergarten Center
3) Funding sources utilized:
   State mini-grants; school budget
4) Overall purpose:
   To develop environmental learning through creative play

G. OBJECTIVES:

Design and construct a model Environmental Learning Tree.
Produce a guide book featuring the design and construction details.
Write and field test activities for the Model Tree.
Disseminate guide book and activities.

H. MATERIALS:

1) Materials produced:
   Guide Book of Activities for Model Tree House
   Blueprint of Model Tree House
2) Free materials avaiable:
   Blueprint of Model Tree House, from the Florida Department of Education
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

Number of schools, teachers and students using the material is unknown.

J. TEACHER PREPARATION: None

K. MATERIALS EVALUATION: None indicated

L. SUMMARY OF ACTIVITIES TO DATE: None indicated

M. PLANS FOR THE FUTURE: None indicated

N. REPORT SUBMITTED BY: S. Earl Watts
November 7, 1979

A. TITLE: MODEL PRIMARY SCHOOL ENVIRONMENTAL STUDY AREA

B. DIRECTOR: S. Earl Watts, Principal
Columbia County Kindergarten Center
West Leon Street
Lake City, FL 32055
904/752-6672

C. DESCRIPTORS: Environmental education, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE:
Nature trail

E. PRINCIPAL STAFF:
25 teachers, 28 aides

CONSULTANT SERVICES UTILIZED: Florida Department of Education, US Soil Conservation Service, Florida Forestry Service

F. HISTORY:

1) Principal originators:
   Mrs. Jeannie Nicely, classroom teacher
2) Date and place of initiation:
   1974-75; Columbia County Kindergarten Center
3) Funding sources utilized:
   Environmental mini-grant; school budget
4) Overall purpose:
   To produce a series of mini-lessons based on using an on-site environmental study area.

G. OBJECTIVES:

Train a cadre of teachers experienced in using the Environmental Study Area and capable of teaching other teachers how to use it.
Produce a booklet of teacher written activities.
Demonstrate lessons.

H. MATERIALS:

1) Materials produced:
   Booklet of mini-lessons for Primary School Environmental Study Area
2) Free materials available:
   Booklet of Mini-lessons, from the Florida Department of Education
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

Number of schools, teachers and students using the materials is unknown.

J. TEACHER PREPARATION: None indicated

K. MATERIALS EVALUATION: None indicated

L. SUMMARY OF ACTIVITIES TO DATE: None indicated

M. PLANS FOR THE FUTURE: None indicated

N. REPORT SUBMITTED BY: S. Earl Watts
November 7, 1979

ERIC Document:

ED 157 771 Columbia County Kindergarten Center Environmental Study Area Guide

A. TITLE: YOU AND YOUR ENVIRONMENT -- AN INTERDISCIPLINARY APPROACH

B. COORDINATOR: E. W. Heise
Hobbs Middle School
309 Glover Lane SW
Milton, FL 32570
904/623-8152

C. DESCRIPTORS: Conservation education, energy education, environmental edcuation, marine education, natural resources, outdoor education, population education, urban environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF:

1 coordinator and 6 committee members from the faculty who in addition to their regular duties update and administer the project as necessary.

CONSULTANT SERVICES UTILIZED: Broad Spectrum Environmental Education Program (BSEEP) in Brevard County. Visited demonstration classes and used some of their materials. Mr. Sam Kates, the Tallahassee Junior Museum, supplied insights into adding nature trail to program.

F. HISTORY:

1) Principal originators:
   E. Heise, coordinator; committee members Sara Blackwell, Min Bowers, Nancy Ranew, Lois Johnston, Daphany Gunter, Terrie Tillett
2) Date and place of initiation:
   1975
3) Funding sources utilized:
   Three Florida Department of Education mini-grants; staff development allocations from Santa Rosa County
4) Overall purpose:
   Students, parents, teachers and the community will become aware of existing environmental problems and suggest practical solutions to them.

G. OBJECTIVES:

To provide hands-on environmental activities to give students a first hand look at our environment and what is being done (and not being done) to protect it; to develop an awareness of our environment and the need for its protection; to develop positive attitudes toward conserving our environment; to give students an opportunity to express their feeling about our environment in a variety of ways; to give students an opportunity to enhance the school environment; and, to provide field trips to help implement the above objectives.

H. MATERIALS:

1) Materials produced:
   116 activities for teacher and student selection during annual environmental program for secondary level.
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

Two schools in Santa Rosa County have used or are using the materials as resources to help develop their programs. Pace Elementary School, with a student population of approximately 1050 students and a faculty of 54, has implemented a program during the 1978-79 school year and will continue the program each year. Pace Middle School, with a student population of approximately 650 and a faculty of 33, is in the process of developing an interdisciplinary unit similar to this using the material for reference and resources.

J. TEACHER PREPARATION:

A summer institute is used for teacher preparation.

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Coordinator, local school officials; State Department of Education officials
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

On April 25 and 26, 1978, all regular classes were suspended and students participated in the Interdisciplinary Environmental Unit. Most students chose five activities per day while others chose all day activities such as:

1. Restoring the nature trail
2. Preparing slide/tape presentations
3. Planting shrubs on the school campus
4. Publishing a newspaper

The most significant additions to the activities were those relating economics wise use and conservation of natural resources. Their titles are:

1. This is My World
2. Purchasing costs money and resources
3. Controlling the use of our natural resources
4. Energy, Energy, where is Energy
5. World Wide Economics

Several resource persons from government and private businesses added their knowledge to some activities. These personnel were:

1. Mr. Still from St. Regis
2. Ms. Windham from Coca Cola
3. Mr. Hitt from the Fresh Water Fish Commission
4. Mr. Howell from the Division of Forestry

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: E. W. Heise
October 3, 1979

A. TITLE: ENVIRONMENTAL STUDIES CENTER

B. DIRECTOR: Roy L. Hyatt
Environmental Studies Center
Escambia County School Board
207 East Main Street
Pensacola, FL 32501
904/438-1140

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, outdoor education, population education, urban environmental education.

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 4

CONSULTANT SERVICES UTILIZED: Organization of project when under Title III, ESEA, in 1968; minimal impact

F. HISTORY:

1) Principal originators:
   Roy L. Hyatt
2) Date and place of initiation:
   August, 1968; Pensacola, Florida
3) Funding sources utilized:
   1968-70: ESEA Planning Grant
   1970-73: ESEA Operation Grants
   1973-present: Escambia County School Board, Florida Department of Education mini-grants.
4) Overall purpose:
   Cooridnate environmental education and energy education within school district.

G. OBJECTIVES:

To assist students in:

1) developing an increased sensitivity to the natural environment;
2) understanding contemporary environmental issues;
3) understanding ecological principals, relationships and concepts; and,
4) shaping their commitment toward seeking ways to resolving environmental problems.

H. MATERIALS:

1) Materials produced:
   Upper-elementary and middle school nature trail guides; beach study guides.
   Approximately four newsletters per year.
2) Free materials available: None indicated
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   Guides for energy education for teachers;
   Pesticides information guide for public use.
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION: Not indicated

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (one day)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Same as listed above.

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

ESEA Planning Project (Escarosa Nature Center Planning Project 1968-70). We conducted 60 field trips to learn needs of teachers in this area. Wrote planning proposal ESEA Operational Project (Environmental Sensitivity Project 1970-73). We established a field trip service for teachers, The Environmental Studies Center which housed the first environmental museum, library, exhibit building workshop. Established the second Environmental Studies Center by rebuilding an old L & N Marine Terminal Building occupied in 1975. We have served Escambia County Schools (average 3,000 students per year) in a planned program -- another 2,000 plus visitors to center, museum and library annually). We began Project Wildlife Rescue.

M. PLANS FOR THE FUTURE:

To build a third Environmental Studies Center on 160 acres of land in mid-county. This will start by the end of 1979 with a YACC program; will build an injured wildlife clinic and compound, an inclement weather workshop, nature trails, picnic tables, a small lake and eventually (if funds can be raised) a new interpretive building by 1981. Also, will build a replica of a northwest Florida pioneer farm and facilities to complement it.

N. REPORT SUBMITTED BY: Roy L. Hyatt
September 28, 1979

Previous Directory References: 1972, 1973

ERIC Documents:

ED 081 586	Handbook for Field Trip Participants in the Environmental Sensitivity Project
ED 157 770	Interpreter's Guide to Blackbird Hawk Nature Trail

A. TITLE: ENERGY MANAGEMENT CENTER (EMC)

B. DIRECTOR: Thomas M. Baird
1050 Old Post Road
P.O. Box 190
Port Richey, FL 33568
813/848-4870 or 848-4881

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, outdoor education

D. HEADQUARTERS: Same as B.

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
The Energy Management Center is a ten acre Gulf Coast facility with three buildings. Various kinds of equipment, particularly solar and wind, are used to demonstrate alternative sources of energy to students from the Pasco County School System in a "hands-on" setting. Examples of estuarine food webs are available to demonstrate the flow of energy through living systems.

E. PRINCIPAL STAFF: 6

CONSULTANT SERVICES UTILIZED:
Dr. Karl Bergey - Wind Energy - University of Oklahoma
Dr. Joe Mazur - Evaluation - University of South Florida
Dr. Anthony Llewellyn - Engineering - University of South Florida
Dr. Ed Steiner - Science Education - University of South Florida

F. HISTORY:

1) Principal originators:
   Richard Endress - Science supervisor, Pasco schools
   Rose Fernandez - Federal programs supervisor, Pasco schools
2) Date and place of initiation:
   July 1, 1974 Pasco County, Florida
3) Funding sources utilized:
   ESEA Title III, ESEA Title IV-C
4) Overall purpose:
   The EMC program is designed to bring significant improvement in the knowledge level of intermediate students with regard to energy and energy conservation. Students acquire knowledge of scientific principles relating to energy, the importance of conserving our energy supplies, and how man has used energy in the past and how he may obtain energy in the future. Students also become more aware of the relationship between their values and the energy environmental problem.

G. OBJECTIVES:

Students will acquire knowledge of scientific principles relating to energy.
Students will learn the importance of conserving our energy supplies.
Students will learn how man has used energy in the past and how he may obtain energy in the future.
Students will learn about careers in our society that deal with energy production.
Students will become more aware of the relationship between their value structure and energy-environmental problems.

H. MATERIALS:

1) Materials produced:
    Intermediate (4-6):
    Module A - "Let's Learn About Energy"
    Module B - "Nature's Energy"
    Module C - "Man and Energy"
    Teacher's Manual
    Secondary (7-12):
    Guide to Use and Construction of Portable Energy Devices (with blueprints) for use in Industrial Arts and Vo Tech classes.
    Other:
    Guide to Conducting Preservice Training for use by a coordinator conducting training workshops.
2) Free materials available: None
3) Materials purchasable:
    Contact Center headquarters
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 40
2) Teachers adopting all of the materials: 141
3) Teachers using some of the materials: Unknown
4) Total students using all of the materials: 4,320
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Anclote Elementary
400 S. Madison Street
Elfers, FL 33531

Heights Elementary School
7114 School Street
Fort Myers, FL 33901

Jacksonville Heights Elementary
7750 Tempest Street
Jacksonville, FL 32210

Randolph Elementary
Box 7347
Asheville, NC 28807

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (2-3 days)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Guide to Conducting Preservice Training

K. MATERIALS EVALUATION:

1) Evaluator:
   Effectiveness was verified and certified by an accomplishment audit January, 1978.
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary:
   Evidence of effectiveness

L. SUMMARY OF ACTIVITIES TO DATE:

See H. above

M. PLANS FOR THE FUTURE:

Program will expand field and experimental opportunities for students visiting the EMC site. Site expansion includes two additional buildings and staff.

Additional programs on energy and the environment are planned for the public as well as teachers.

N. REPORT SUBMITTED BY: Carol C. Snell
Training Specialist
September 24, 1979

ERIC Documents:

ED 180 803 Let's Learn About Energy, Module A, Pilot Form

ED 180 804 Nature's Energy, Module B, Fourth Grade, Pilot Form

ED 180 805 Man and Energy, Module C, Fourth Grade, Pilot Form

A. TITLE: SEMINOLE ENVIRONMENTAL STUDIES CENTER

B. DIRECTOR: Mrs. Bettie Palmer
The School Board of Seminole County
1211 Mellonville Avenue
Sanford, FL 32771
305/322-1252

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources

D. HEADQUARTERS: Soldiers Creek Park
Route 2 - Box 215C
Longwood, FL 32750
305/321-0452

SPECIAL FACILITIES FOR VISITORS TO SEE:
Building, trails, boardwalk, picnic, restrooms, 246 acres

E. PRINCIPAL STAFF: 5

CONSULTANT SERVICES UTILIZED: State, local, university

F. HISTORY:

1) Principal originators:
   Bettie Palmer and the School Board of Seminole County
2) Date and place of initiation:
   Planning stages in 1970; reality stage in 1977.
3) Funding sources utilized:
   National (Youth Conservation Corps); State (Department of Education); Local (School Board).
4) Overall purpose:
   To provide environmental education to all Seminole County students.

G. OBJECTIVES:

1) To increase, through an interdisciplinary approach, the student's awareness of the interrelationship and interdependence between people and their surroundings.
2) To provide the student with a basic foundation of some major ecological principles.
3) To offer experiences which will give all student's the hands-on experiences; thus giving him or her an opportunity to succeed and improve self-concept.
4) To increase the student's awareness and knowledge of ecosystems which exist in the local environment.

H. MATERIALS:

1) Materials produced:
   - K-12 -- Seminole County Scope and Sequence
     - Energy Conservation Program Seminole County School
   - 1-5 -- Man and Mother Nature - A Balance
     - Birds
     - Florida Plant and Field Guide
     - Life in a Tree
     - Mushrooming with Ideas
     - Zoo
     - Seminole County Nature Guide for Fifth Grade
     - Power Packs
   - Secondary --
     - The First (Social Studies)
     - Compass (Math, Social Studies)
     - Environmental Studies Centre Field Activities for Middle and High School Students
     - Humus, Sediment, Moisture Content of the Soil
     - Naturalists Walk Through Big Tree East
     - Trees of Seminole County
     - Energy
     - American Energy Guide - High School
2) Free materials available:
   All free to teachers as long as supply lasts.
3) Materials purchasable: None
4) New instructional materials being developed:
   A guide for the fifth grade
5) Materials anticipated for development:
   Several "walk-through" trail guides
6) Commercial association: None

I. IMPLEMENTATION:

All Seminole County schools have some of the materials (approximately 40) and are using them with approximately 35,000 students.

J. TEACHER PREPARATION:

1) Consultative service available: Yes, in county
2) In-service education program: Yes, in county
3) Pre-service training program: Yes, in county
4) Kinds of preparation programs:
   Workshops (varies according to need)
   Evening classes (varies according to need)
5) Available pre-service and/or in-service teaching materials:
   Yes

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

Facilities on the 246 acre site include a center building with interpretative displays and exhibits, restrooms, teacher resource area, a covered pavillion adjacent to the Center, and a large open group picnic area. A network of trails and short boardwalks give access to oak-palmetto scrub, pine transition, mesic hammock, hydric hammock, and fresh water swamp plant communities. Crowe's Creek and Soldier's Creek are accessible for study and lead to Lake Jessup. Sulphur springs, a potter's clay deposit, ancient cypress trees and numerous osprey nests are unique points of interest.

A variety of multidisciplinary learning experiences are offered. Elementary level activities are designed to foster environmental awareness in the student. Middle school activities stress a deeper investigation and knowledge of environmental topics, while high school students delve more intensely into environmental problems.

Lower elementary classes come for a one day field trip, while fifth graders come to the center for two consecutive days. Middle and high school field trips are tailored to fit each teacher's requirements with from two to three multidisciplinary activities planned for each class day.

M. PLANS FOR THE FUTURE:

Expand and provide increased public services

N. REPORT SUBMITTED BY: Bettie Palmer
November 9, 1979

ERIC Document:

ED 157 758 Chemistry for Pollution Control

A. TITLE: ANDERSON ENVIRONMENTAL EDUCATION CENTER
SAWGRASS LAKE PARK

B. DIRECTOR: Joseph T. Maier
Environmental Education Resource Teacher
Anderson Environmental Education Center
Sawgrass Lake Park
7400 25th Street North
St. Petersburg, FL 33702

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE:
Center displays, exhibits and aquariums. 360-acre park with lake and a mile of elevated boardwalk plus nature trails.

E. PRINCIPAL STAFF: 2 teachers, 3 park naturalists (Cooperative project: Pinellas County Park Department and school system)

CONSULTANT SERVICES UTILIZED: Mr. James Phillips, Regional Environmental Education Coordinator from the State Department of Education asssisted in many ways, especially with regard to the general public program.

F. HISTORY:

1) Principal originators:
   Pinellas County School System, Joseph T. Maier; Pinellas County Park Department, Scott Wright; Southwest Florida Water Management District; John A. Anderson, formerly with Management District.
2) Date and place of initiation:
   January, 1977; Pinellas County
3) Funding sources utilized:
   Southwest Florida Water Management District; Pinellas County School System; Pinellas County Park Department; Environmental mini-grants, State Department of Education; civic club grants.
4) Overall purpose:
   To provide the general public and school children with insight into the environment in which they live.

G. OBJECTIVES:

1) Provide a K-5 continuum in environmental education for use at the Center and post activities for reinforcement.
2) Provide activity guides, modules and other materials for use in the elementary and middle schools.

3) Provide a self-guide for use by the general public during their visits to the Center and Park.
4) Provide programs and activities for the handicapped.

H. MATERIALS:

1) Materials produced:
  a) Primary (K-6)
    Trailblazer Program
      Grade 1 -- Animals
      Grade 2 -- Sawgrass Trail Coloring Book
      Grade 3 -- Maple Trail Discovery Walk
      Grade 4 -- Sawgrass Trail Activity Packet
      Grade 5 -- Maple Trail Activity Packet

    If Animals Could Talk Booklet Series
      Primary (1-3) -- Otter, Black Bear, Gopher Tortoise, Raccoon
      Intermediate (4-6) -- Manatee, Bald Eagle, Florida Panther, Indigo Snake

    Puzzles
      Grades 2 and 4 -- Display Area Puzzle
      Grade 3 -- Animals in Danger
      Grade 5 -- Endangered Species Puzzle

    Pictorial Primer
    Investigating a Pond Activity Packet
    Scottdivers and the Magooks (visual limitation activity)

  b) Secondary (7-12)
    Investigating a Pond Activity Packet
    Scottdivers and the Magooks (visual limitation activity)
    All About Armadillos
    Environments of the Past: Geology of Florida
    Our Calendar in Wood, The Tree Ring Story

  c) General public
    Self-Guide -- Sawgrass Lake Park
    Checklist of the Birds of Fort De Soto Park and Pinellas Bayway
    A Guide to the Snakes of Sawgrass Lake Park
    A Guide to the Turtles and Lizards of Sawgrass Lake Park
    A Guide to the Trees of Sawgrass Lake Park
    Checklist of Birds of Sawgrass Lake Park
    All About Armadillos

    Slide/sound presentation
    Introduction to Sawgrass Lake
    Anderson Center Construction

Continuum program
Sensory boxes
2) Free materials available: None
3) Materials purchasable: All
All materials, with the exception of the Slide/sound presentations, are available at cost plus postage. Please write if interested.
4) New instructional materials being developed:
K-5 and general public; 7th grade Endangered Species Activity
5) Materials anticipated for development:
Energy Activities to be used with Solar Energy Project
6) Commercial association: None

I. IMPLEMENTATION:

1) Number of schools and students using materials not applicable.
2) Number of teachers using materials: 180
3) Selected schools utilizing the program:

Shore Acres Elementary
(Faye Kerrigan)
1800 62nd Avenue NE
St. Petersburg, FL 33703

Azalea Elementary
(Anna Bennett)
1680 74th Street N
St. Petersburg, FL 33710

Bauder Elementary
(Jeanine Blauvelt)
12755 0 86th Avenue N
Seminole, FL 33542

Ponce De Leon Elementary
(Doris Mahony)
1301 Ponce De Leon Avenue
Clearwater, FL 33516

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
Workshop (3 hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION:

Teacher administered pre- and post-tests, item analysis by Center team.

L. SUMMARY OF ACTIVITIES TO DATE:

We have been working since 1974 to initiate and develop an environmental education program in Pinellas County. In 1976 an opportunity arose to develop a cooperative program with the several governmental agencies. The "cooperation" of the participating agencies was not always easy to obtain but the final result has made it all worthwile. Anderson Environmental Education Center is located in Sawgrass Lake Park. The school system, by contract, must provide programs for people of all ages. To date, we have concentrated on developing programs primarily for the K-5 school students and the general public. The elementary schools still maintain a degreee of flexibility that allows for of campus activity. All day and half day programs are available at the Center for school students. K-3 programs are limited to half day. Through funds provided by state environmental grants each elementary school has received an interdisciplinary activities guide for grades K-5 and the middle schools have been provided guides for grades 6, 7 and 8. Also 18 student learning modules have been provided for the elementary grades.

M. PLANS FOR THE FUTURE:

A solar energy project will be carried out this year. The project will include: Solar water heater that is portable, solar space heater for classroom, windmill that will produce electric power and pump water for a solar still, a solar cell apparatus and a sundial. A whole new series of activities will be developed for use with the new project materials.

N. REPORT SUBMITTED BY: Joseph T. Maier
September 26, 1979

A. TITLE: LAKE COUNTY FRESHWATER STUDIES PROGRAM

B. DIRECTOR: Bob Mish
School Board of Lake County
201 West Burleigh Blvd.
Tavares, FL 32778
904/343-3531

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Freshwater ecology

D. HEADQUARTERS: Lake Shore Drive
Eustis, FL 32726

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Large, fully equipped floating laboartory. The land base facility is currently under construction. When completed, it will include a fully equipped wet laboratory, professional library, rest rooms, offices, large meeting hall, docking area, and storage sheds.

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: Wildlife, Game and Fish Commission; Department of Pollution Control; Soil Conservation Service; and Division of Forestry.

F. HISTORY:

1) Principal originators:
   Carl Pettitt, Bob Mish, Betty Rynearson, Bill Kelsey, Wally Bain
2) Date and place of initiation:
   February, 1977; Fisheries Laboratory, Eustis, FL 32726
3) Funding sources utilized:
   Environmental Education Mini-Grants
   Local (The School Board of Lake County has contributed the major source of monies toward the development of this project).
4) Overall purpose:
   Introduction to the freshwater environment.

G. OBJECTIVES:

1) Provide an interdisciplinary curriculum pertaining to the freshwater environment which will complement, enrich and vitalize the existing school curriculum.

2) Introduce students, teachers, and citizens to the physical, chemical and biological relationships and interdependencies involved in the overall maintenance of the freshwater environment.

H. MATERIALS:

1) Materials produced:
   - Adult Education programs
   - Inservice workshops
2) Free materials available:
   None currently; secondary instructional materials when developed
3) Materials purchasable:
   None currently; when developed
4) New instructional materials being developed:
   Seondary (7-12)
5) Materials anticipated for development: Undetermined
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 7
   (These schools are helping to develop the program)
2) Teachers adopting all of the materials: 5
   (Five are using the materials that are being developed)
3) Teachers using some of the materials: 5
4) Total students using all of the materials: 750
5) Total estimated for I-4; definite for I-1,2,3
6) Selected schools where the program materials are being used:

Umatilla High School
Drawer 69
Umatilla, FL 32784

Howey Science Center
P.O. Box 427
Howey-in-the-hills, FL 32737

Eustis High School
East Washington Avenue
Eustis, FL 32726

Mount Dora High School
700 North Highland Avenue
Mount Dora, FL 32757

J. TEACHER PREPARATION:

1) Consultative service available: (future plans)
2) In-service education program: Yes
   (Introduction to the Freshwater Environment workshop)
3) Pre-service training program: (future plans)
4) Kinds of preparation programs:
   - Workshop (42 hours)
   - Summer Institute (future goal)
   - Evening Classes (Adult Education program being planned)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   It will be provided.

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Upon receipt of Environmental Education Mini-Grant, a floating laboratory was built, ready for use in February, 1977. The laboratory is 39 feet long, and 12 feet wide (constructed from aluminum, stainless steel, red wood and fiberglass) and is powered by a 70 hp outboard with a 7½ hp auxillary. To help conduct interpretative investigations dealing with water quality, primary productivity, water economics and management, and many others, the floating laboratory is equipped with a power wench, print-out depth meter, 165 amp 12 volt electrical circuits, microscopes dissecting and phase scopes, chemical analysis equipment, and collecting apparatus for plants and animals..

Early in 1979, monies were obtained from the school board to begin construction of a land base facility upon city-owned land next to Lake Eustis, Eustis, Florida. This facility will include a large wet laboratory, meeting room, professional library, offices, rest rooms, storage areas, and large docking facility. The plant will be completed by January, 1980. Once completed, this will provide us with more flexibility in our program design thereby increasing the number of students that can participate in the program at one time.

Another boat is currently being sought which will provide us with greater cruising range to nearby lakes and their tributaries.

During the past 2 years, extensive work has been done on the development of fresnwater studies material. Teachers working both independently and cooperatively are currently designing/ developing a program which will meet the specific objectives of the program and enhance the educational goals of the school system.

M. PLANS FOR THE FUTURE:

Diurnal Migration Studies (Plankton)
Insular Ecology
Research Project for gifted students
Weekend field trips open to the public

N. REPORT SUBMITTED BY: Bob Mish
October 1, 1979

A. TITLE: PINE JOG CENTER OF FLORIDA ATLANTIC UNIVERSITY

B. DIRECTOR: Dr. Ray M. Iverson
Pine Jog Environmental Services Center
6301 Summit Blvd.
West Palm Beach, FL 33406
305/686-6600

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, outdoor education, population education, urban environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 11

F. HISTORY:

1) Principal originators:
   Mr. and Mrs. Alfred G. Kay
2) Date and place of initiation:
   1960; West Palm Beach, FL
3) Funding sources utilized:
   80% private grants and gifts
   20% university and school board funding
4) Overall purpose:
   Act as principal source for all environmental education activities at all levels for Palm Beach County

G. OBJECTIVES: Same as F-4

H. MATERIALS:

1) Materials produced:
   a) Primary
      Grade 1 -- One Night at Pine Jog
      Grade 3 -- Classroom materials stressing affective domain
      Grade 5 -- Classroom materials stressing habitats and interdependence
   b) Secondary
      Grade 7 -- Pine woods field and class materials
      Grade 7 -- Cypress field and class materials
      Grades 10 - 12 -- Five units including Estuarine Energetics, Beach Dynamics, Sewage, Freshwater Ecosystems, Aquatic Ecology
   c) Other
      Slide programs stressing unique natural systems of South Florida; and, book Common Plants of Palm Beach and Broward Counties.

2) Free materials available:
   All listed in H-1, a and b.
3) Materials purchasable:
   Book (H-1-c); illustrated, cataloged by habitat; $3.00 donation.
4) New instructional materials being developed:
   For all levels, including adult
5) Materials anticipated for development:
   Producing two to three new slide programs each year, and other materials as needed.
6) Commercial associations: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 80
2) Teachers adopting all of the materials: 400
3) Teachers using some of the materials: not indicated
4) Total students using all of the materials: 15,000
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

   All public schools of Palm Beach County; approximately 30 private schools also.

J. TEACHER PREPARATION:

1) Consultative service avaiable: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshops (one hour to one weekend)
   Evening Classes (12 classroom hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

School board contracted programs --
    Grade 5 -- Habitats and Interdependence
    Grade 7 -- Pine Woods Ecology, Cypress Swamp Ecology
    Marine Biology -- Estuaries, beaches, cypress, sewage, aquatic ecology
Non-contracted programs --
    Grade 3 -- Fun in the Woods
    Adult -- Weekend wilderness workshops (backpacking and canoe camping).
        Approximately ten mini-courses per year, including fishing, birding, nature photography, native plants, horticulture, organic garden, outdoor art, marine biology, ecology of South Florida, herpetology, aviculture, others.

M. PLANS FOR THE FUTURE:

'79-80: After school classes for students; programs within retirement communities; guided bus trips for hotel and convention guests.

'80-on: fill needs as they develop or as they are perceived.

N. REPORT SUBMITTED BY: Robert A. Bergen
Instructor
September 1, 1979

Previous Directory References: 1972, 1975

ERIC Document:

ED 147 217 Sample Energy Conservation Education Activities for Elementary School Students

A. TITLE: SANDY CREEK NATURE CENTER

B. EXECUTIVE DIRECTOR: Nancy L. Blount
Old Commerce Road
Athens, GA 30607
404/546-0427

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, urban environmental education.

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE:
Nature trails; classroom and visitors building; resource library; historic interpretive site; live reptile exhibit

E. PRINCIPAL STAFF: 6

CONSULTANT SERVICES UTILIZED: Planning workshop for Board of Directors given by Jean and Charles Milmine in 1975; formulated ideas for goals and objectives of operation.

F. HISTORY:

1) Principal originators:
   Northeast Georgia Nature Center, Inc., (NEGNC) Athens, GA, non-profit group of local business and professional people
2) Date and place of initiation:
   NEGNC incorporated in 1973; land purchased 1974; building constructed and programs begun 1976.
3) Funding sources utilized:
   City of Athens, Clarke County, Clarke County School District, State of Georgia Heritage Trust Fund
4) Overall purpose:
   To preserve natural area and foster environmental education.

G. OBJECTIVES: Same as F-4.

H. MATERIALS:

1) Materials produced:
   a) Primary (K-6)
      Pre and post trip materials for approximately 10 field trip themes; approximately 10 "treasure box" travelling hands-on exhibits; picture and article file.
   b) Secondary (7-12)
      "Treasure boxes" (see above); curriculum for advanced study high school course on "Vertebrate Natural History"; picture and article file

- c) Primary and Secondary
  "Snake Day" and "Sun Day" educational/informational packets containing textual information, suggested topics for discussion and ideas for activities, and additional references
- d) Other
  For use by visitors, self-guided trail booklet; informational brochures for various trails.

2) Free materials available: None indicated
3) Materials purchasable:
   Monthly newsletter for the $10 fee of annual membership in the organization; Sandy Creek Calendar, $3.50; both available from Sandy Creek Nature Center
4) New instructional materials being developed:
   K-6 multidisciplinary environmental education curriculum
5) Materials anticipated for development:
   Energy education module to accompany proposed appropriate technology exhibit wing/classroom.
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 20
2) Teachers adopting all of the materials: Not indicated
3) Teachers using some of the materials: 50 per year
4) Total students using all of the materials: 2,500 per year
5) Totals stated are estimated.
   "Using...materials" refers to participating in the field trip program as well as the use of other written and exhibit materials.
6) Selected schools where the materials are being used:

Oglethorpe Avenue Elementary School
1150 Oglethorpe Avenue
Athens, GA 30601

Winterville Elementary School
305 Cherokee Road
Athens, GA 30601

Clarke Middle School
1235 Baxter Street
Athens, GA 30601

Cedar Shoals High School
Cedar Shoals Drive
Athens, GA 30601

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No

3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (10 hours)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Elementary school field trips are conducted every spring and fall. In-school science enrichment programs are given in middle and high schools throughout the year. "Treasure Box" travelling exhibits and a picture and artcile file are available for use with all grades. Vertebrate Natural History course has been developed and taught in high school. Special educational/informational packets have been developed for all grades. An in-service teacher workshop on the use of school grounds for environmental education has been given. Numerous programs have been conducted for the general public, including nature walks; natural history slide shows/discussions, workshops, short courses, and special events such as "Snake Day" and "Sun Day". A "Junior Explorers" group for 8 - 12 year olds provides extra-curricular activities and investigations. Plans for county-wide recycling and bike paths are being developed and promoted.

M. PLANS FOR THE FUTURE:

Roundtable discussion oriented/activity based courses for high school students; in association with University of Georgia faculty, special programs will be given to these students on selected series of topics.

N. REPORT SUBMITTED BY: Nancy Blount, Executive Director
Olin Allen, Program Director
September 12, 1979

A. TITLE: ENVIRONMENTAL EDUCATION PROGRAM (Including Independent Study Program and M.A.P. -- Monitoring Atlanta's Pollution)

B. COORDINATOR:

Kay Blackwelder
224 Central Avenue SW
Atlanta, GA 30303
404/659-3381, ext. 172

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education, urban environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1.5

CONSULTANT SERVICES UTILIZED: Initially a few paid consultants were utilized; volunteer consultants have been and are still the backbone of the program.

F. HISTORY:

1) Principal originators:
   The Research and Development division of the Atlanta Public Schools, with an advisory committee, developed the idea of giving students released time from school to pursue environmental topics in such a way that they could acquire new skills or implement old ones through independent study. The present environmental education coordinator provided leadership from the beginning.
2) Date and place of initiation:
   Fall, 1971; Atlanta, Georgia (Independent Study Program)
   Summer, 1978; Atlanta, Georgia (M.A.P. Program)
3) Funding sources utilized:
   Independent Study Program -- grant from Health, Education and Welfare (Office of Environmental Education), 1973 to date.
   M.A.P. Program -- general funds of Atlanta Public Schools, 1978 to date.
4) Overall purpose:
   To develop:
   1) environmental literacy and positive environmental attitudes such as would stem from an understanding of the delicate balance between all living organisms and their surroundings;
   2) an awareness of the problems generated when this balance is disturbed, particularly by the impact of man; and,
   3) motivation for finding solutions.

G. OBJECTIVES:

1) To offer high school students the opportunity to learn about environmental concerns by becoming personnally involved in actual problems (chiefly local);
2) to foster development of independent learning skills; and,
3) to bring students in closer contact with community agencies and individuals who share a concern for preserving a quality environment and who have particular expertise to offer.

H. MATERIALS:

1) Materials produced:
    a) Student Guide to Independent Study (for students doing environmental research)
    b) Resource Guide for Environmental Education (to help students doing environmental research)
    c) Lessons from Litter (a guide for teachers K-8, to help use the litter problem as a springboard to teaching environmental education; used as part of science curriculum; printed by Atlanta Clean City Commission)
    d) From the Inside Out (a guide for teachers in utilizing the school site)
    e) "Are you here, Jack?" (slide/tape show, now made into filmstrip)
    f) "The Question -- Air" (slide/tape show produced by M.A.P. students on air pollution),
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed:
    Revision of "From the Inside Out"; also, new material for teachers K-12, primarily for K-8.
5) Materials anticipated for development:
    M.A.P. students may develop a film strip or slide show on litter in the elementary schools.
6) Commercial association: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION: Limited service, informal

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

1) Development and implementation of independent study program at senior high level in environmental education, including in-service for teachers, production of guide; guidance and preservation of student research.
2) Development and implementation of M.A.P. program, from which have come student-produced slide shows and student-gathered data on local environmental problems such as acid rain, particulates, litter, lead in paint and soil and glazes.

M. PLANS FOR THE FUTURE:

We are planning an environmental program for exceptional children (gifted, learning disabled, physically handicapped, etc.) in conjunction with the Outdoor Activity Center, which is a nature center almost in the middle of Atlanta.

N. REPORT SUBMITTED BY: Kay Blackwelder
October 18, 1979

Previous Directory Reference: 1973

ERIC Documents:

ED 076 405	Evaluation of the Project for Developing an Experiential Curriculum in Environmental Education, 1971-72
ED 180 757	Student Guide for Environmental Education Program, Revised Edition

A. TITLE: FERNBANK SCIENCE CENTER

B. DIRECTOR: Dr. Lewis S. Shelton
Fernbank Science Center
156 Heaton Park Drive, NE
Atlanta, GA 30307
404/378-4311

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, outdoor education, population education, urban environmental education

ADDITIONAL DESCRIPTORS: Planetarium, observatory, electron microscope, earth science, meteorology, geology, chemistry, physics, aerospace, computer, and horticulture education.

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Exhibit hall, nature trails, planetarium, observatory, greenhouse and botanical garden

E. PRINCIPAL STAFF: 40

CONSULTANT SERVICES UTILIZED: Only on a limited basis

F. HISTORY:

1) Principal originators:
   Dr. Jim Cherry, former superintendent of schools, DeKalb County School System; Dr. Lewis Shelton, director, Fernbank Science Center; Dr. Robert Platt, Emory University; Dr. W. B. Baker, Emory University.
2) Date and place of initiation:
   April, 1966, assembly of initial staff; December, 1967, formal opening of building; Atlanta, GA
3) Funding sources utilized:
   US Office of Education, Title III, ESEA; US Office of Education, Title III, NDEA; DeKalb County School tax revenues; various small grants
4) Overall purpose:
   See section G

G. OBJECTIVES:

1) Improve, supplement and extend instruction in the natural and physical sciences in preschool, elementary, secondary and adult education.
2) Stimulate, encourage and develop active interest in the natural and physical sciences.
3) Develop a better informed, scientifically literate citizenry.

H. MATERIALS:

1) Materials produced:
   Many materials have been produced; see below.
2) Free materials available:
   Sample program descriptions upon request; descriptive brochures and publications.
3) Materials purchasable:
   None at present
4) New instructional materials being developed:
   Continually, for both elementary and high school
5) Materials anticipated for development:
   New programs, instructional materials, and instruction, kits, slide sets, and exhibits are continually being developed.
6) Commercial associations: None

I. IMPLEMENTATION:

All schools in the DeKalb County School System use Fernbank services as an integral part of the total instructional program. There are 103 schools involved, with approximately 82,000 students. The services are also available to non-DeKalb schools.

Selected schools where the program materials are being used:

Dunaire Elementary School
651 South Indian Creek Drive
Stone Mountain, GA 30083

Snapfinger Elementary School
1365 Snapfinger Road
Decatur, GA 30032

Hambrick Elementary School
1101 Hambrick Road
Stone Mountain, GA 30083

Gordon High School
2190 Wallingford Drive
Decatur, GA 30032

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (10 to 50 clock hours)
   Summer institute (varies)
   Evening classes (varies)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Materials are developed specifically for teachers enrolled in a variety of courses. Specific handouts are available upon request.

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Internally, by staff, participating teachers and central office staff
2) Pertinent published research on evaluation:
   "Factors Related to the Attendance of Four Sociological Groups at Museums in the Metropolitan Atlanta Area,"Ph.D. dissertation by E. Kay Davis, Georgia State University, 1975.
   "The Developing and Field Testing of an Instrument using the Planetarium to Evaluate the Attainment of the Concept of Annual Motion," Ph.D. dissertation by Robert R. Hayward, Georgia State University, 1975.
   "The Effect that Participation in an Instructional Program at Fernbank Science Center has on Upper Elementary School Students' Scientific Attitudes," Ph.D. dissertation by Don H. Lucas, Georgia State University, 1974.
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

Fernbank Science Center, started in 1966, is owned and operated by the DeKalb County, Georgia, School System in cooperation with Fernbank, Inc., a non-profit organization. It contains the following facilities:

Fernbank Forest: 68 acres of relatively undisturbed urban woodland with one and one-half miles of developed trails, including an "easy effort trail" for wheelchair-bound and visually-impaired visitors.

The Planetarium: Equipped with a Zeiss Mark V planetarium projector. It has a seating capacity of 500.

The Observatory: Equipped with a 36 inch reflecting telescope and equipment for photography, photometry, spectroscopy, and tracking of satellites.

Electron Microscope Classroom: A Zeiss EM9 S-2 transmission microscope and a ISI-M-7 scanning microscope are available for student and teacher training.

The Meteorology Laboaratory: Includes a meteorology base station, a seismometer, and a facsimile recorder which receives weather maps and satellites from Washington, DC

The library: Contains over 15,000 volumes of science reference books, journals, and microfilms.

Botanical Gardens: Both greenhouse and garden facilities contain exotic and indigenous species of ornamental plants.

The exhibit hall: Contains 9,000 square feet of exhibits and educational displays, the Human Development and Embryology Classroom and "A Curious Place", an exploratory classroom for kindergarten and special education students.

All of these facilities, although designed for student use, are available to the general public at designated times. Total attendance in 1978 was 708,000 of which over 300,000 was scheduled school groups.

M. PLANS FOR THE FUTURE:

Possible development of museum of natural history.

N. REPORT SUBMITTED BY: David O. Funderburk
Coordinator of Instruction
September 17, 1979

Previous Directory References: 1972, 1973, 1975, 1976

ERIC Documents:

ED 040 084 Fernbank Science Center Forest Teacher's Guide

ED 089 952 Fernbank Science Center Environmental Activities

A. TITLE: CHATTAHOOCHEE NATURE CENTER, INC.

B. DIRECTOR: Kenneth W. Gibbons
9135 Willeo Road
Roswell, GA 30075
404/992-2055

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education, urban environmental education.

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Trails, exhibits, boardwalk thru swamp, guided tours, seasonal classes, programs for private and public groups.

E. PRINCIPAL STAFF: 8

CONSULTANT SERVICES UTILIZED: Natural Science for Youth Foundation has provided extensive guidance.

F. HISTORY:

1) Principal originators:
   John Ripley Forbes, George Ivey, Emmett Rushin, Nancy Cadore, Trippe Slade, Bill Bailey, Roy Wood, Sybil Relston
2) Date and place of initiation:
   June 24, 1976
3) Funding sources utilized:
   Private funding; Fulton County
4) Overall purpose:
   Development of an environmentally and ecologically responsible community through the educational process.

G. OBJECTIVES:

1) Education -- through programming and exhibits.
2) Serve as a museum for visitation.
3) Create atmosphere of awareness in regards to the environment.
4) Wildlife Rehabilitation program to attend and release injured and orphaned wildlife.

H. MATERIALS:

1) Materials produced:
   Primary (K-6) Programming --
   a) Animal Homes Along the Chattahoochee
   b) Reptiles and Amphibians

        c) Water Ecology
        d) Energy Crisis?
        e) Forest Succession
        f) Mammals of Georgia
        (These are only a few of our programs; we have over 20).
    Secondary (7-12)
        a) Web of Life
        b) Endangered Species
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed:
    Yes, for primary grades
5) Materials anticipated for development:
    Various pamphlets on subjects relating to the natural sciences.
6) Commercial associations: None

I. IMPLEMENTATION:

We offer our programs to the various school systems, public and private, and the students visit our facility. In the third year of our project we are reaching 28,000 children annually.

J. TEACHER PREPARATION: None at present

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The Chattahoochee Nature Center is essentially an educational institution, offerring:

1) Classes on natural sciences to groups that make reservations in advancement;
2) wildlife rehabilitation as an important function of the Nature Center (injured and orphaned animals are cared for and when possible released); and,
3) museum facilities to the public, open 7 days a week, at no charge.

M. PLANS FOR THE FUTURE:

1) Further development of classes and a broadening scope to include addressing environmental problems.
2) Teacher training.
3) Information gathering and dispursement of same.
4) Extension of annual program, gathering and cataloging of information.

N. REPORT SUBMITTED BY: Kenneth Gibbons
November 15, 1979

A. TITLE: OATLAND ISLAND EDUCATION CENTER

B. DIRECTOR: Tony Cope
711 Sandtown Road
Savannah, GA 31410
912/897-3773

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, outdoor education, urban environmental education.

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
The Center has two miles of trails through 175 acres of woodlands, pond, and marsh communities including nine habitats for indigenous fauna. In addition, there is an observatory complex, a marine monitoring station, and a Heritage Farm Complex. Activities have been developed utilizing each of these facilities.

E. PRINCIPAL STAFF: 9

F. HISTORY:

1) Principal originators:
   Tony Cope, Fred Schlein, Julian Halligan, Saxon Bargeron
2) Date and place of initiation:
   September 1, 1974
3) Funding sources utilized:
   Young Adult Conservation Corps; Office of Environmental Education; Youth Conservation Corps; Title III, ESEA; Title IV C; Title V B; private gifts
4) Overall purpose:
   Develop an awareness and understanding of the coastal environment and the various interrelationships operating within that environment.

G. OBJECTIVES:

1) To help the student examine more critically those phenomena and relationships which constitute his/her environment through the study of:
   a) coastal ecosystems
   b) the ecological principals governing those systems
   c) man's interrelationships with these ecosystems
2) To enable the student to utilize knowledge acquired about the environment through:
   a) providing him/her experience with a non-urban environment.
   b) assisting him/her to develop a greater understanding of, and concern for, society's environmental problems.

c) aiding him/her in the examination of specific and general environmental implications of human activities.

d) promoting the clarification of the values held by him/her from which all environmental activities and decisions are derived.

e) assisting him/her in acquiring problem-solving and decision-making skills necessary to guide him/her in living in harmony with the environment.

f) helping him/her to develop a sense of civic responsibility and the awareness that his/her actions affect others just as the actions of others affect him/her.

H. MATERIALS:

1) Materials produced:

Primary (k-6) -- a number of programs at each grade level for local use at Oatland.

Secondary (7-12) -- S-Teri Modules

Beaches and Sand Dunes: A study of beach and dune formation, with emphasis on the role of dunes in stopping erosion; features a trip to the beach. Prerequisites: none. Time required: 3 class periods, plus 1 field trip. Visuals: 1 filmstrip.

Crab: An introduction to the importance, morphology and life cycle of crabs. Prerequisites: none. Time required: 2½ class periods.

Dock: Basic aquatic sampling and data collection techniques, highlighted by a field trip to a dock. Prerequisites: Measuring Dissolved Oxygen, Salinity, pH. Time required: 8 class periods, plus 1 field trip. Visuals: 1 15-minute film.

Energy Flow: Animal energetics and the flow of energy through food chains, with the help of an energy game and a mouse. Prerequisites: Food; Photosynthesis and Respiration are recommended. Time required: 6½ class periods.

Fish: Basic morphology and identification of marine fish. Prerequisites: none. Time required: 3 class periods.

Food: A look at feeding relationships, including food chains and food webs, plus community feeding levels. Prerequisites: none. Time required: 5 class periods.

Gut Analysis: A study of feeding adaptations, featuring laboratory analysis of stomach contents to determine what and where fish eat. Prerequisites: none. Time required: 4½ class periods. Visuals: 1 8-minute film.

Invertebrates: Scientific keys and how to use them to identify crabs and shrimps. Prerequisites: none. Time required: 4½ class periods.

Measuring Dissolved Oxygen: Oxygen analysis by the Winkler Method; plus factors affecting the oxygen content of water. Prerequisites: none. Time required: 4 class periods. Visuals: 2 8-minute films.

Osmosis: Experiments with a marine worm help make clear the workings of osmosis. Prerequisites: Salinity is recommended. Time required: 2½ class periods.

pH: Discovering the pH of common solutions and what pH means. Prerequisites: none. Time required: 2½ class periods.

Photosynthesis: Food production, how to measure it, and the conditions for it. Prerequisites: Measuring Dissolved Oxygen. Time required: 5½ class periods.

Populations: A study of populations dynamics by means of various activities including a predator-prey game. Prerequisites: none. Time required: 5½ class periods.

Respiration: The Winkler Test and a fish help simplify the complexities of cellular respiration. Prerequisites: Measuring Dissolved Oxygen; Food; and, Photosynthesis are recommended. Time required: 3 class periods.

Salinity: From density to salinity, with the help of hydrometers and layered solutions. Prerequisites: none. Time required: 5½ class periods.

Salt Marsh: An introduction to the marshes and the concept of zonation, via model building and actual field sampling in a marsh. Prerequisites: Sampling is recommended. Time required: 8 class periods, plus 1 field trip. Visuals: 2 filmstrips and 1 12-minute film.

Sampling: A general introduction to the whys and hows of sampling. Prerequisites: none. Time required: 2½ class periods.

Tides: What tides are, how they are formed, how to predict them, and how to read tide tables. Prerequisites: none. Time required: 4 class periods. Visuals: 1 10-minute film.

(The term "class period: refers to a 50-minute session. Time for testing is included in the times given above. Unless otherwise noted, the modules do not have accompanying visuals.)

2) Free materials available:
   Twenty-five marine ecology modules available from the State Department of Education for each state.
3) Materials purchasable:
   "Interpretive Guide to Oatland" from the Center.
4) New instructional materials being developed:
   For grade levels K-12 and the general public
5) Materials anticipated for development:
   "Interpretive Guide to Oatland" and a number of instructional activities designed for local use at the Center (K-12 and general public).
6) Commercial associations: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: Unknown
2) Teachers adopting all of the materials: Unknown
3) Teachers using some of the materials: 200
4) Total students using all of the materials: 10,000
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Groves High School
100 Wheathill Road
Savannah, GA 31408

Johnson High School
3013 Shell Road
Savannah, GA 31404

Wilder Middle School
1300 E. 66th Street
Savannah, GA 31404

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (varies)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Teachers' guides to each activity listed.

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Consulting team from University of North Carolina, Greensboro; Oatland staff; in-service teachers; Title III Evaluating team.
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

The Oatland Island facility, with its extensive open lands and several permanent buildings, was conveyed to the Savannah-Chatham County Board of Education in August, 1974, by the United States Department of Health, Education and Welfare. This property, located on a deep water creek which flows into the Intracoastal Waterway, consists of approximately 175 acres of land, including 75 acres of marshland, 50 acres of cleared land and 50 acres of climax forest. In addition, there are a number of buildings which contain laboratories and in which much of the original equipment and furniture remain.

The basis for the school system's acquisition of the property was that it would be developed into an environmental education center to serve the 35,000 students in Chatham County public schools, and to also serve students in private and parochial elementary and secondary schools, area colleges and universities, and, through non-formal educational activities. the adult citizenry of this coastal metropolitan region. Students from as far away as Boston and St. Louis have been involved in activities at the Center. Oatland has hosted visitors from 42 states and 18 foreign countries.

All of the activities listed in the first five years of the Five Year Plan developed for the facility have been completed with the exception of converting the annex building into a dormitory-cafeteria complex. In addition, a number of projects not listed in the plan have been completed. Students working in the summer Youth Conservation Corps Projects have constructed two nature trail systems with the necessary bridges, rain shelters, two outdoor classrooms, two floating docks, nine natural wild animal habitats, a marine monitoring station, and a 500' marsh walkway. Other students and volunteers have laid out 16 compass trails through the forest area and have constructed a farm animal area, two observatories, and a 105' observation tower.

A number of programs and activities utilizing the constructed facilities have been developed at the Oatland Island Education Center. Many of these programs have been acclaimed state-wide and nationally, and during the first five years of operation over 170,000 students have received instruction at the Center.

The staff at Oatland Island recoginzes the need for additional new programs and has begun development of several such programs. Planning and construction is underway for the development of an authentic working replica of a small south Georgia farm of the 1950's. In addition to science and math activities, this new facility would provide a basis for activities in history, economics and agriculture.

Since the Center is located just outside a coastal port city on the Atlantic Ocean there is a need to develop programs in that direction. Anticipating the acquisition of a sailing vessel, programs in basic seamanship and navigation, climatology, marine biology and oceanography are currently being designed. Activities in celestial navigation could be designed in conjunction with our observatory and current astronomy programs. Other activities in marine maintenance would be developed with the present vocation-technical school and marine technology program house at the Center. This program provides instruction in marine engine maintenance and fiber glassing to post high school students.

The Center is open to the general public during the week and is now opening the second Saturday of each month with programs specifically designed for the public. An average of 700 persons have attended these monthly programs.

M. PLANS FOR THE FUTURE:

Oatland staff members will be developing a variety of new multi-disciplinary instructional activities to be utilized at the Center and in the classroom. Additional emphasis will also be placed on developing adult environmental education programs.

N. REPORT SUBMITTED BY: Tony Cope
September 12, 1979

ERIC Document:

ED 174 435	Resource Material Developed for Secondary Education (18 booklets)

A. TITLE: OKEFENOKEE COOPERATIVE EDUCATIONAL SERVICES AGENCY (CESA)

B. DIRECTOR: Donald L. Berryhill
Okefenokee CESA
Route 5, Box 406
Waycross, GA 31501
912/285-6151

C. DESCRIPTORS: Conservation education, environmental education, outdoor education.

ADDITIONAL DESCRIPTORS: Swamp system education (Okefenokee)

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE:
The Okefenokee CESA serves the area's eight school systems. Teachers and students im many disciplines and technical service areas. The environmental education program is only one part of the total CESA program. There are nature trails, boardwalks, study shelters and interpretive exhibits to see.

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED: 1967 meeting of collegiate, secondary and elementary school persons, forestry, Department of Natural Resource personnel, US Fish and Wildlife Service, Florida and Georgia State Department of Education personnel.

F. HISTORY:

1) Principal originators:
   Sr. A. L. Woodard and Donald L. Berryhill
2) Date and place of initiation:
   July 11, 1967; Waycross, Georgia
3) Funding sources utilized:
   ESEA Title III, 1967-70; Georgia State Department of Education, 71-79.
4) Overall purpose:
   To develop in our students an awareness of the value of wildlife, their interrelationships with their physical environment and man's impact upon these relationships.

G. OBJECTIVES:

1) To develop an appreciation for the value of wildlife.
2) To develop an understanding of the relationships that exist between organisms and their environment.
3) To develop an attitude of conservation of our natural resources and wildlife, especially endangered species.

H. MATERIALS:

1) Materials produced:

Primary (K-6) --	General Nature Study Sun, Soil, Water -- Plants, Animals Animal Occupations Skin, Scales, Fins, and Fur
Secondary (7-12)	Reptiles of Okefenokee Geology and Geography of Southeast Georgia Ecologic Measurements of the Okefenokee
Other	Mammalian Structural Study (Skulls) Significant Plants of Okefenokee Food Webs in a Swamp

2) Free materials available:
   Single copies only; Plant life of Okefenokee, Vertebrates of Okefenokee
3) Materials purchasable: None indicated
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 44
2) Teachers adopting all of the materials: not indicated
3) Teachers using some of the materials: 150
4) Total students using all of the materials:
   All materials are not appropriate for all students or all teachers.
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Ware County High School
Airport Road
Waycross, GA 31501

McDonald Street School
McDonald Street
Waycross, GA 31501

Hoboken Elementary School
Hoboken, GA 31542

Homerville Elementary School
Homerville, GA 31614

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Not this coming school year.
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (1 day)
   Teachers observe staff with classes; then on subsequent visits teachers do instruction with assistance from staff.
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES:

The program is utilized by the public schools of eight Southeast Georgia school systems and is a small part of the total CESA program of services available. Student use is between 3,500 to 4,500 annually. The facilities of a private park are utilized for most of the students work on an isolated boardwalk deep in the Okefenokee Swamp. Visits from school groups outside the eight school systems may be arranged on week-ends only.

M. PLANS FOR THE FUTURE:

Formation and Composition of Peat; Indian Life in Okefenokee; Water Chemistry of the Swamp.

N. REPORT SUBMITTED BY: Donald L. Berryhill
August 30, 1979

Previous Directory Reference: 1976

A. TITLE: BLUE-WATER MARINE LABORATORY (BML)

B. DIRECTOR: John J. McMahon
University of Hawaii
Marine Options Program
2560 Campus Road, George Hall 230
Honolulu, HI 96822
808/948-8444

C. DESCRIPTORS: Conservation education, environmental education, marine education, outdoor education

ADDITIONAL DESCRIPTORS: Experiential education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Space for visitors on all BML cruises (first-come-first-serve basis). Materials and equipment demonstration.

E. PRINCIPAL STAFF: 1 full-time, 2 part-time
2 volunteers (1979-80 only)
2 undergraduates
20 high school students

CONSULTANT SERVICES UTILIZED: Only through interaction with teachers, parents, and other marine educators

F. HISTORY:

1) Principal originators:
   Douglas K. Pendleton, Barbara J. Lee, Barry H. Hill, John P. Craven, Jack R. Davidson
2) Date and place of initiation:
   October, 1972
3) Funding sources utilized:
   State of Hawaii Marine Affairs Coordinator; State of Hawaii Department of Education; University of Hawaii Sea Grant College Program; McInerny Foundation; lab fees, tuition fees; University of Hawaii Marine Option Program
4) Overall purpose:
   a. To provide seagoing educational opportunities which emphasize peer teaching for high school students throughout the State of Hawaii.
   b. To explore new seagoing educational activities.

G. OBJECTIVES:

1) To provide seagoing educational cruises at the secondary level throughout the State of Hawaii.
2) To train selected high school students to become Cruise Instructors in marine science, seamanship, and safety at sea.
3) To develop personal growth of the Cruise Instructors in maturity, teamwork, stamina, analytical skills, and leadership ability.

H. MATERIALS:

1) Materials produced:
    Secondary level -- Blue-Water Marine Laboratory Cruise Guide for Teachers
    1979 Summer Training Program Outline
    Ku'i a lua (The Joining of Two)
    Instructional Guide (internal use only) for teaching about plankton, sediments, benthos, water quality and navigation.
2) Free materials available:
    Blue-Water Marine Laboratory Cruise Guide for Teachers
    1979 Summer Training Program Outline
3) Materials purchasable: None
4) New intructional materials being developed:
    For grades 9 through 12
5) Materials anticipated for development:
    Education game stressing operational aspects of Honolulu Harbor.
6) Commercial associations: None

I. IMPLEMENTATION:

There are an estimated 1,500 to 2,500 students using the program each year.

Selected schools with participating students:

Farrington High School
1564 North King Street
Honolulu, HI 96817

Hana High-Elementary
P.O. Box 128
Hana, HI 96713 (Maui)

Konawaena High-Intermediate
P.O. Box 698
Kealakekua, HI 96750 (Hawaii)

Maryknoll High School
1402 Punahou Street
Honolulu, HI 96822

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshop (half day)

K. MATERIALS EVALUATION:

No formal, professional evaluation has been done; however, the student instructors have been exceptionally successful in careers both at sea and on land. Unsolicited and solicited feedback from teachers has also been exceptionally positive.

L. SUMMARY OF ACTIVITIES:

The Blue-Water Marine Laboratory began as a student project by two undergraduates at the University of Hawaii Marine Option Program. It evolved into an independent program with its own funding within two years. To date, more than 15,000 students have participated in BML cruises and approximately 125 students have participated as cruise instructors. Papers describing the BML model have been presented at conferences sponsored by the National Marine Education Association, the Marine Technology Society, the National Sea Grant College Program, and the Northeast Marine Education Council.

Samples collected by the BML have contributed to the State Department of Health water quality programs; research on micro-mollusk communitites as indicators of environmental stress; discovery of a new reproductive mode in a species of foraminifera; and at least one doctoral disseration in oceanography.

M. PLANS FOR THE FUTURE:

Seagoing marine science options will continue. Future developments will include closer ties to academic research activities through graduate student thesis work, reconnaissance sampling, and similar activities.

New seagoing non-science options will be developed. These options will stress the commercial waterfront, cultural history, maritime history, and mechanical/industrial "shop" activities.

N. REPORT SUBMITTED BY: John J. McMahon
September 11, 1979

A. TITLE: ENERGY USE AND THE ENVIRONMENT PROJECT

B. DIRECTOR: Mr. Miles Muraoka
Office of Instructional Services
Hawaii Department of Education
1270 Queen Emma Street, Room 1102
Honolulu, HI 96813
808/548-5983

C. DESCRIPTORS: Conservation education, energy education, environmental education

D. HEADQUARTERS: 1289 Mahiole Street, Room P-3
Honolulu, HI 96819
808/833-6959

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
A teacher center that serves as a clearinghouse, linking the teachers with the many community, state, and national agencies and organizations concerned with energy.

E. PRINCIPAL STAFF: 4

CONSULTANT SERVICES UTILIZED: Seven consultants were hired to write up a framework for the project. Among the consultants were professors from the University of Hawaii in engineering, political science and education, and also a classroom teacher.

F. HISTORY:

1) Principal originators:
   Mr. Miles Muraoka
2) Date and place of initiation:
   December 27, 1977, a proposal was submitted in application for ESEA Title IV monies; Honolulu, HI
3) Funding sources utilized:
   ESEA Title IV
4) Overall purpose:
   The goal of energy education is to develop "energy literate" citizens with the necessary intellectual resources, values, attitudes, and decision-making skills to cope with problems and issues associated with energy use and the environment. The following list of traits may be used to define an energy literate person:

   An energy literate person:

   a) uses energy conservation and wise-use concepts, practices, and values in making everyday decisions he/she interacts with other people in his/her environment;

b) understands that the generation of energy-related knowledge depends upon the inquiry process and upon conceptual theories;
c) distinguishes between scientific evidence and personal opinion regarding energy-related matters;
d) identifies the relationships between energy-related facts, concepts and theories;
e) recognizes the limitations as well as the usefulness of scientific and technological research and development of energy in improving the quality of life;
f) has sufficient knowledge and experience so that he/she can appreciate energy-related work being carried out by others.
g) understands the interrelatedness of science, technology and other facets of society, including social, economic, political and cultural systems, when considering issues and problems related to energy and the environment;
h) recognizes the human origin of energy-related knowledge and understands that this knowledge is tentative and subject to change as evidence accumulates;
i) has adopted values based on principles underlying wise and judicious use of energy and the environment;
j) continues to inquire and increase his/her knowledge about energy and the environment throughout his/her life;
k) uses problem-solving skills and takes appropriate actions in contributing to the solutions of energy-related problems;
l) recognizes that energy-related decisions made today will affect his/her life and those of future generations;
m) uses decision-making skills in assessing the outcomes of alternative actions and policies regarding preferred futures related to energy use and the environment.

G. OBJECTIVES:

To achieve the goal of developing an "energy literate" population, a general objective was formulate for each of 15 core themes, which were selected to reflect the scientific, technological, historical, social, political, economic, and human perspectives of energy issues and problems. The core themes were developed by integrating the energy-related concepts and the views from as many disciplines and interest a areas within the community as possible. They are tangible, definable, relevant and "in toto" a reasonably complete representation of energy in Hawaii, yesterday, today and tomorrow.

The following is a list of core themes and general instructional objectives. Each objective is attained when the student:

1) Energy fundamentals: Applies basic laws of science and mathematics to the study of energy.
2) Evolution of energy: Understands the historical development and use of energy.
3) Energy today: Knows current sources and uses of energy.
4) Conservation: Formulates and practices a conservation ethic in regard to energy use and the environment.
5) Human dimensions of energy: Understands that personal values and choices of energy use will affect the quality of life for all.
6) Energy alternatives: Knows alternative energy sources and uses:
7) Energy storage and transmission systems: Knows various energy storage and transmission systems.
8) Transportation: Knows a wide range of transportation modes and their energy resource requirements.
9) Environmental/ecological considerations: Knows various energy options and their environmental/ecological benefits and consequences.
10) Energy cost, responsibility and privilege: Understands various energy cost/responsibility/privilege interrelationships.
11) Energy vs. population vs. food: Understands various energy/population/food interrelationships.
12) Energy interdependence: Understands current energy exchange practices which link nations in an economically, socially and politically interdependent manner.
13) Energy self-sufficiency: Understands the movement towards self-sufficiency as necessary and feasible.
14) Appropriate energy technology: understands that energy technology has to fit the use to which it is put with minimum negative effects upon the quality of life.
15) Future perspective: Utilizes decision-making and problem-solving skills in formulating plans and actions to achieve a preferred future in energy use and the environment.

H. MATERIALS:

1) Materials produced: None
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed:
   Instructional modules for each grade level in the elementary school (K-6) and for various subject areas at the secondary level (Basic Practical Arts, Science, Social Studies, etc.). The modules are composed of suggested activities based on the 15 core themes that form the framework for the project.

5) Materials anticipated for development:
   A resource handbook which will be a compilation of suggested materials and resources available to teachers and students. It includes lists of reference books, curriculum materials, films, field trips, speakers, etc.
6) Commercial associations: None

I. IMPLEMENTATION: None, to date

J. TEACHER PREPARATION:

1) Consultative service available: One is planned
2) In-service education program: One is planned
3) Pre-service training program: One is planned
4) Kinds of preparation programs:
   Workshop (varying from 6 to 32 hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Being developed are a trainer's manual and a slide tape show of the project.

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Established community linkages; conducted literature and resource search; commenced development of K-12 modules; commenced development of handbook; identified and trained district resource coordinators; conducted orientation programs for center.

M. PLANS FOR THE FUTURE:

Complete materials for dissemination; conduct in-service activities by districts; design student assessment evaluation instruments; coordinate and plan for future materials development (University of Hawaii, community agencies, etc.)

N. REPORT SUBMITTED BY: Florence Asato
In-service Coordinator
September 11, 1979

A. TITLE: KEAKEALANI OUTDOOR EDUCATION CENTER PROGRAM (KOEC)

B. DIRECTOR: Mrs. Elaine Sumida
Box 9
Mt. View, HI 96720
808/968-6336

C. DESCRIPTORS: Conservation education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

F. HISTORY:

1) Principal originators:
   Shu Tanaka and Kiyoto Mizuba
2) Date and place of initiation:
   September, 1976; Hilo, HI 96720
3) Funding sources utilized:
   State general fund
4) Overall purpose:
   To provide valuable first-hand experiences that will motivate students to become more critically aware of the interrelationship of man with nature.

G. OBJECTIVES:

1) To bring about changes in attitudes and values which will result in actions appropriate in keeping with a desirable environment.
2) To experience healthful living, good social living and group experiences.

H. MATERIALS:

1) Materials produced:
   Primary (K-6) -- a guide for the KOEC program; numerous lessons in loose leaf form.
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial associations: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 23
2) Teachers adopting all of the materials: 50
3) Teachers using some of the materials: 60
4) Total students using all of the materials: 1,300
5) Totals stated are definite
6) Selected schools where the program materials are being used:

Kaumana Elementary School
1710 Kaumana Drive
Hilo, HI 96720

Mt. View School
Box 9
Mt. View, HI 96771

DeSilva Elementary School
278 Ainako Avenue
Hilo, HI 96720

Kalanianaole School
Box 28
Papaikou, HI 96781

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes (non-credit mini-sessions)
3) Pre-service training program: Yes (one-to-one correspondence)
4) Kinds of preparation programs:
   Workshops (individual or small group work sessions of four hours) or
5) Project Coordinator travels to the school and works with teachers who are plann to go to camp.

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

(The following is the 1978-1979 Year End Report for the Keakealani Outdoor Education Center.)

Hawaii District's Keakealani Outdoor Education Center has completed its third year of operation, reflecting an increase in school participation and interest. The year concluded with over a thousand sixth graders camping at Volcano. Program statistics of 1976-1977, 1977-1978, 1978-1979 and the anticipated figures for the coming 1979-1980 school year are listed below:

76-77	843 students; 58%	14 schools; 65%
77-78	1077 students; 84%	19 schools; 80%
78-79	1187 students; 97%	21 schools; 88%
79-80	1250 students; 98%	23 schools; 96%

For school year 1979-1980, 23 of 24 elementary schools in Hawaii District already have confirmed reservations.

In early October, members of the Board of Education visited the center and observed the students of Kaumana School as they carried out their outdoor activities. Several members of the School Advisory Council were also in attendance.

The Values Inventory, "The Way I Feel", was administered on a pre/post test basis to all participating students. The overall district results were positive, although not very significant. For the 1979-1980 school year, the sixth graders will be completing a 20-item questionnaire as compared to last year's 18-items. Teachers will be asked to administer the pre/post-Inventory with greater consistency and uniformity.

During this past year, 27 individual camp-outs involving children from all parts of this island were completed. Nearly all groups experienced a successful trip. Student behavior, in general, was improved over previous years. Many teachers with two or three years of outdoor education experience displayed increased confidence and ability with the program. Examples of some of their actions are cited below.

-- Several developed and incorporated a few of their own lesson plans and activites into the camp schedule.
-- Many were very flexible with the scheduling of activities.
-- Several altered the field lessons to adjust them to the needs of their students.
-- Nearly all were willing to attempt new and different study activities.
-- A good number displayed greater independence in carrying on the day-to-day operations at camp.
-- Many had good student management.

These teacher qualities played a key role in the success of the camps at Keakealani this year.

The 1979-1980 school year will see the facilities at Keakealani Outdoor Education Center experience its heaviest use by our district. By the end of the year in June, all present sixth graders will have traveled to Volcano and spent three days and two nights at Keakealani.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Shu Tanaka
Curriculum Specialist
November, 1979

ERIC Document:

SE 030 598 A Guide for the Keakealani Outdoor Education Center: A Camp Program

A. TITLE: CONSERVATION AND ENVIRONMENTAL EDUCATION WORKSHOP

B. DIRECTOR: Dr. Richard J. McCloskey
Department of Biology
Boise State University
1910 University Drive
Boise, ID 83725
208/385-3490

C. DESCRIPTORS: Conservation education, environmental education, outdoor education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 7

CONSULTANT SERVICES UTILIZED: US Forest Service, Project Learning Tree consultants

F. HISTORY:

1) Principal originators:
   Mr. Vern Friedly; Dr. Don Obee
2) Date and place of initiation:
   Donnelly, ID; 1967
3) Funding sources utilized:
   US Forest Service; Boise Cascade
4) Overall purpose:
   To increase environmental awareness; present process approach to learning

G. OBJECTIVES: None indicated

H. MATERIALS:

Not applicable at present time; in process of developing material for lessons in elementary schools and public involvement.

I. IMPLEMENTATION:

Schools, teachers and students using the program is unknown. Selected schools that have had teachers participate in the workshops are:

Meridian Primary School (Meridian, ID);
Nampa Junior High School (Nampa, ID);
Pocatello School District (Pocatello, ID);
Boise School District (Boise, ID).

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1 week, about 15 hours per day)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   US Forest Service, Project Learning Tree

K. MATERIALS EVALUATION:

1) Evaluator(s):
   US Forest Service; Project Learning Tree
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

Summer workshops for the last 12 years to introduce teachers to Forest Service environmental education materials; Project Learning Tree, Strands, OBIS, etc.; weekend pre-service and in-service workshops.

M. PLANS FOR THE FUTURE:

Continuation of present activities.

N. REPORT SUBMITTED BY: Richard J. McCloskey
September 28, 1979

Previous Directory References: 1973, 1975

A. TITLE: ADVANCED ECOLOGICAL EDUCATION AND OUTDOOR SKILLS WORKSHOP

B. DIRECTOR: Dr Richard J. McCloskey
Department of Biology
Boise State University
1910 University Drive
Boise, ID 83725
208/385-3490

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Outdoor skills

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 10

CONSULTANT SERVICES UTILIZED: State Department of Education

F. HISTORY:

1) Principal originators:
   Dr. Richard McCloskey
2) Date and place of initiation:
   McCall, ID, 1978
3) Funding sources utilized:
   Boise Cascade; Safari Club International
4) Overall purpose:
   Present ecological information utilizing outdoor skills as the vehicle...

G. OBJECTIVES: None indicated

H. MATERIALS: None indicated

I. IMPLEMENTATION: None indicated

J. TEACHER PREPARATION: Workshop (one week, 15 hours per day)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Summer workshops using backpacking, fishing, hunting, nature photography and camping techniques as vehicle to teach ecological principles. Have certified Hunter Safety Instructors for Department of Fish and Game. Have instructed teachers in principals of outdoor recreation and wildlife management.

M. PLANS FOR THE FUTURE:

Continuation of present activities

N. REPORT SUBMITTED BY: Richard J. McCloskey
September 28, 1979

A. TITLE: "SOME THINGS ARE WORTH SAVING"
DRIVER EDUCATION ENERGY PACKET

B. DIRECTOR: Kathy Puckett
Education Program Manager
Idaho Office of Energy
Statehouse
Boise, ID 83702
208/384-3800

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources

ADDITIONAL DESCRIPTORS: Driver's education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 2

F. HISTORY:

1) Principal originators:
   Original packet -- Kathy Puckett, Education Program Manager;
   Eric Guise, Transportation Program Manager.
   Supplements I and II -- Kathy Puckett; and Donna Kemp, Transportation Program Manager
2) Date and place of initiation:
   Summer, 1977; Idaho Office of Energy
3) Funding sources utilized:
   US Department of Energy; Energy Conservation Plan funding
4) Overall purpose:
   To promote energy savings in the transportation sector through driver's education classes.

G. OBJECTIVES

1) To promote an energy conservation ethic among Idaho's young drivers;
2) to promote an awareness of the need for energy conservation as it relates to transportation among driver's education instructors.

H. MATERIALS:

1) Materials produced:
   Secondary -- "Some Things are Worth Saving"
   -- driver education energy packet
   -- supplement I (transparency masters)
   -- supplement II (fuel saving tips flip charts)

2) Free materials available:
   Above materials available at no cost to driver's education instructors in the State of Idaho
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION: Statewide

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs:
   Materials presented to driver's education instructors throughout the State at regional workshops sponsored by the State Department of Education.

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

"Some Things Are Worth Saving," a driver education energy packet, was developed by Idaho Office of Energy staff members in cooperation with Idaho Department of Education Driver Education Consultants. These materials were distributed to all driving instructors in the State at workshops during the fall of 1977. Supplementary materials in the form of transparency masters and flip charts were developed in the summer of 1978 and distributed to all driving instructors in the state during fall, 1978, workshops; at that time the packets from 1977 were evaluated by this office and it was determined that 78.5% of the teachers receiving the information used the packets with their classes.

M. PLANS FOR THE FUTURE:

Purchase of commercial films to be placed in the driver education film library at the State Department of Education.

N. REPORT SUBMITTED BY: Kathy Puckett
August 28, 1979

ERIC Document:

ED 180 831 Some Things are Worth Saving...Like Energy, Driver Education Energy Packet, Transparency Masters, and Supplement II

A. TITLE: ENERGY ANT MULTI-MEDIA KIT

B. DIRECTOR: Kathy Puckett
Education Program Manager
Idaho Office of Energy, Statehouse
Boise, ID 83702
208/384-3800

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

F. HISTORY:

1) Principal originators:
Idaho Office of Energy; Idaho League of Women Voters
2) Date and place of initiation:
1977; Boise, ID
3) Funding sources utilized:
Donations
4) Overall purpose:
To promote conservation among Idaho's youngsters preschool ages and older.

G. OBJECTIVES:

1) To promote energy conservation among youngsters
2) To involve public libraries in the state in energy conservation.
3) To involve volunteer organizations, schools and businesses, state, local and federal government in an energy conservation project.

H. MATERIALS:

1) Materials produced:
Primary -- Energy Ant Multi-Media Kit which includes a set of puppets and puppet script as well as Energy Ant materials from US Department of Energy
Other -- Energy Ant Multi-Media instruction packet; Videotape of the Energy Ant puppet show; Slide/tape show of the Energy Ant project
2) Free materials available:
Energy Ant Multi-Media Kit Instruction Packet, available at no cost to Idaho educators
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

The project's kits were distributed to 100 public libraries throughout the state and are checked out by teachers, students, parents, etc.

Selected institutions where the programs materials are being used and/or are available:

Caldwell School District (Environmental Education)
1101 Cleveland
Caldwell, ID 83605

Boise Public Library
715 S. Capitol
Boise, ID 83704

Nampa Public Library
101 11th Avenue, South
Nampa, ID 83651

Pocatello Public Library
Pocatello, ID 83201

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes, for librarians
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (2 hour)

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Idaho Office of Energy; minimum of 6,800 youngsters reached with this material by January, 1979.
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

Energy Ant grew from an illustrated comic character to a three-dimensional animated messenger for energy conservation in Idaho via Energy Ant Multi-Media Kits. One hundred kits were developed and distributed to public libraries throughout the state. Production of the kits involved the League of Women Voters, the Idaho Office of Energy, Boise Public Library, 12 businesses, 13 volunteer organizations and three schools; at one time over 200 people were involved in the project.

The Energy Ant Multi-Media Kit Instruction Packet was developed due to numerous requests from teachers who wanted to put their own kit together. Energy Ant materials have the most success with preschool and primary grade children. Upper grade students may want to prepare the puppet show and present it to younger students.

A videotape of the puppet show has been developed and a slide/tape show has been produced to illustrate the complexity and success of this cooperative project.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Kathy Puckett
August 28, 1979

ERIC Document:

SE 029 820 Energy Ant Multi-Media Kit Instruction Packet

A. TITLE: IDAHO ENERGY CONSERVATION RESOURCE GUIDES
GRADES 7 TO 12

B. DIRECTOR: Kathy Puckett
Idaho Office of Energy
Statehouse
Boise, ID 83702
208/384-3800

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: Worked with teams of teachers in each subject area to develop guide for that subject area; consultant hired to edit and illustrate.

F. HISTORY:

1) Principal originator:
   Idaho Office of Energy under State Energy Conservation Plan in cooperation with the State Department of Education.
2) Date and place of initiation:
   First workshop held in February, 1978
3) Funding sources utilized:
   US Department of Energy, Energy Conservation funds
4) Overall purpose:
   To provide energy education materials to instructors, grades 7 through 12, to use with students in a variety of subject areas to increase energy awareness among young people in the state.

G. OBJECTIVES:

"LUV Energy Conservation"

LUV represents the key words in the first three goals (Laws, use, values). The fourth goal is energy conservation.

1. Natural laws determine the availability of energy.
2. Use of energy affects both people and their environment.
3. Our values determine how we use energy.
4. Energy conservation is necessary to maintain our lifestyle.

H. MATERIALS:

1) Materials produced:
   Secondary -- Idaho Energy Conservation Resource Guides in Career Education; Health Education; Environmental education, language arts, math and science.
2) Free materials available:
   These materials are available at no cost to Idaho teachers.
3) Materials purchasable: None
4) New instructional materials being developed:
   Language Arts Resource Guide for grades K-6.
5) Materials anticipated for development: None indicated
6) Commercial association: none

I. IMPLEMENTATION:

The various guides have been distributed to all teachers grades 7-12, in each subject area.

Selected schools where the program materials are being used:

Borah Senior High School
6001 Cassia Street
Boise, ID 83705

Pocatello Senior High School
325 North Arthur Street
Pocatello, ID 83201

Caldwell Senior High School
Montana and Willow Streets
Caldwell, ID 83605

Lowell Scott Junior High School
3400 East McMillian
Meridian, ID 83642

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs: Not indicated

K. MATERIALS EVALUATION: None (planned for early 1980)

L. SUMMARY OF ACTIVITIES TO DATE:

Development of project goals during one-day statewide conference. Workshops in each of the six subject areas to develop resource guides in the areas of Career Education, Health Education, Environmental Education, Language Arts, Math and Science, using the project goals. Distribution of resource guides through State Department of Education subject area specialists.

M. PLANS FOR THE FUTURE:

Development of Energy Conservation resource guide, grades K-6, in Language Arts. Development of additional subject area guides grades 7-12 as needed. Development of multi-media kit.

N. REPORT SUBMITTED BY: Kathy Puckett
Education Program Manager
Project Coordinator
August 29, 1979

ERIC Documents:

ED 182 131	Idaho Energy Conservation Resource Guide for Career Education, Grades 7-12
ED 182 132	Idaho Energy Conservation Resource Guide for Health Education, Grades 7-12
ED 182 133	Idaho Energy Conservation Resource Guide for Mathematics, Grades 7-12
ED 182 134	Idaho Energy Conservation Resource Guide for Environmental Education, Grades 7-12
ED 182 135	Idaho Energy Conservation Resource Guide for Science, Grades 7-12
ED 182 136	Idaho Energy Conservation Resource Guide for Language Arts, Grades 7-12

A. TITLE: IDAHO ENERGY CONSERVATION RESOURCE GUIDE FOR INDUSTRIAL ARTS EDUCATION

B. DIRECTOR: Kathy Puckett
Idaho Office of Energy
Statehouse
Boise, ID 83702
208/384-3800

C. DESCRIPTORS: Conservation education, energy education, environmental education

ADDITIONAL DESCRIPTORS: Industrial arts education, vocational education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: Project director provided by the University of Idaho. Team of teachers worked on this guide.

F. HISTORY:

1) Principal originators:
   Idaho Office of Energy and Idaho Division of Vocational Education
2) Date and place of initiation:
   Fall, 1978; Boise, Idaho
3) Funding sources utilized:
   Energy Conservation funds from the US Department of Energy
4) Overall purpose:
   To promote energy conservation among young people through education.

G. OBJECTIVES: None

H. MATERIALS:

1) Materials produced:
   Secondary (7-12) -- Idaho Energy Conservation Resource Guide; Industrial Arts Education
2) Free materials available:
   This title is available to Idaho educators at no cost.
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development:
   Energy Conservation Resource Guide in Language Arts, Grades K-6.
6) Commercial association: None

I. IMPLEMENTATION:

The Guide has been distributed to all industrial arts teachers, grades 7-12, statewide; approximately 250. The number of students using the materials is unknown.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs:
    Workshop (1 hour)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

This publication is currently being distributed to all industrial arts educators in the state at workshops.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Kathy Puckett
Education Program Manager
Project Coordinator
October 18, 1979

ERIC Document;

ED 182 137 Idaho Energy Conservation Resource Guide for Industrial Arts Education

A. TITLE: PROJECT LEARNING TREE (IDAHO)

B. DIRECTOR (Idaho): Karen Underwood
State Department of Education
LBJ Building
Boise, ID 83720
208/384-2113

C. DESCRIPTORS: Conservation education, energy education environmental education, natural resources, outdoor education, population education, urban environmental education

D. HEADQUARTERS (National): Salina Star Route
Boulder, CO 80302
303/444-2390

E. PRINCIPAL STAFF: 5, upon request, not full-time

F. HISTORY:

1) Principal originators:
   Western Regional Environmental Education Council and the American Forest Institute
2) Date and place of initiation: Not indicated
3) Funding sources utilized:
   American Forest Institute
4) Overall purpose:
   To develop an interdisciplinary environmental education program

G. OBJECTIVES: (See Project Learning Tree materials)

H. MATERIALS:

1) Materials produced:
   Supplementary curriculum guide for grades K-12
2) Free materials available:
   Guides, brochures, newsletters
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

Contact Project Learning Tree headquarters for this information.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (1 or 2 days)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Project Learning Tree handbook

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Bureau of School Service and Research, University of Washington, Seattle
2) Pertinent published research on evaluation:
   Project Learning Tree and Independent Study and Evaluation
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

In-service teacher workshops

M. PLANS FOR THE FUTURE:

Leadership training workshop

N. REPORT SUBMITTED BY: Karen Underwood
October 9, 1979

A. TITLE: SNAKE RIVER REGIONAL STUDIES CENTER

B. DIRECTOR: Ms. Donna Parsons
The College of Idaho
Caldwell, ID 83605
208/459-5214

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Folklore; history; economics; water quality

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: A 50-member advisory council with representatives from business, industry, government, academia, citizens organizations.

F. HISTORY:

1) Principal originators:
   Lyle Stanford, Ph.D. and Louis Attebery, Ph.D., professors at the College of Idaho
2) Date and place of initiation:
   July, 1970
3) Funding sources utilized:
   Private foundation, federal and state agencies, and contracts
4) Overall purpose:
   To encourage study of the Snake River Region of the Northwest, and to gather material on the region and serve as a clearinghouse for information and ongoing studies.

G. OBJECTIVES:

To assist anyone who is interested in learning more about the Snake River Region -- students, teachers, researchers, planners, government workers, etc.

H. MATERIALS:

1) Materials produced:
   a) Primary (K-6)
      "From Wilderness to the City" a 12-minute slide/tape show on the history of the Snake River Region from the time the first white man came in 1805.
   b) Secondary (7-12)
      "Japanese-Americans in Idaho" a slide/tape presentation;
      Future Tense, a workbook on land-use planning

b) Secondary (7-12)
"Japanese-Americans in Idaho" a slide/tape presentation;
Future Tense, a workbook on land-use planning

c) "Perspectives on Agriculture in Idaho" a 12-minute slide/tape presentation

2) Free materials available:
Future Tense

3) Materials purchasable: None

4) New instructional materials being developed: None

5) Materials anticipated for development: None

6) Commercial association: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION: Not applicable

K. MATERIALS EVALUATION: Not applicable

L. SUMMARY OF ACTIVITIES TO DATE:

Besides the slide/tape shows and workbook that we have produced specifically for teachers, we have collected materials for an Information Center which are available for loan. We also have individual copies of research reports by students and faculty on varied subjects such as Dialectology of the Region, Hiking Trails of the Owyhees and Seven Devils Mountains, Flora and Fauna of Islands of the Snake River. We have a large number of reports and literature on various aspects of the environment of the Region.

We occasionally hold in-service workshops in environmental science for elementary and high school teachers; we have lecture series and workshops for the adult public on regional issues.

M. PLANS FOR THE FUTURE:

Primarily workshops for teachers; non-credit classes for the general public.

N. REPORT SUBMITTED BY: Donna Parsons
September 5, 1979

Previous Directory Reference: 1975

ERIC Documents:

ED 075 263	A Guide to Environmental Study Areas of the Snake River Region, Final Report
ED 176 943	Future Tense: A Workbook for Planning the Use of Land

A. TITLE: MOTHER NATURE'S PUBLIC RELATIONS OFFICE

B. DIRECTOR: Carl Brown
Box 634
Lake Fork, ID 83635
208/634-5228

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

F. HISTORY:

1) Principal originators:
   Carl Brown
2) Date and place of initiation:
   January, 1973
3) Funding sources utilized:
   No special funding sources; all projects stand on their own in the marketplace
4) Overall purpose:
   To provide people of all ages with accurate, interesting unbiased information on natural resources.

G. OBJECTIVES:

To present workshops and written materials that provide accurate, relevant natural resource information in an enjoyable manner.

H. MATERIALS:

1) Materials produced:
   a) Primary (K-6)
      Adventure Notebook: A monthly newsletter to youngsters from a professional naturalist; self-published, currently out-of-print.
   b) Secondary (7-12)
      Co-author of General Science for Tomorrow's World, Smallwood and Brown, McGraw-Hill, 1980.
   c) Other
      Wildlife Planning Services available to schools, planners and developers; Workshop on edible plants, mushrooms, wildlife and outdoor survival.

2) Free materials available: None at present
3) Materials purchasable:
General Science for Tomorrow's World, Smallwood and Brown, McGraw-Hill, 1980.
4) New instructional materials being developed: None
5) Materials anticipated for development:
We will probably be developing new materials within the year, but have not yet identified them.
6) Commercial association:
Mc-Graw Hill Publishing Company for science textbooks

I. IMPLEMENTATION:

The textbook development is being handled by McGraw-Hill and is available in the fall of 1979; the book is in print and is available but is just presently undergoing the adoption process in various states.

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs:
Evening classes
Occasional natural history courses available through University of Idaho extension and McCall City Recreation program.

K. MATERIALS EVALUATION: By McGraw-Hill

L. SUMMARY OF ACTIVITIES TO DATE:

Mother Nature's Public Relations Office provides a variety of environmental education services to schools and to the general public on both the local and national levels. These services include workshops, writing, illustration, publishing and consultation.

The purpose behind all of our programs is to excite people about the natural world, to show them the problems that face them and to offer positive, alternative solutions to those problems.

Projects include a natural resources-oriented general science textbook that is available from McGraw-Hill, teacher and general public workshops on natural history, and consultant services available to schools, publishers, land developers and the general public. Adventure notebook, a newsletter for youngsters is currently out-of-print.

M. PLANS FOR THE FUTURE:

Plans are not defined, but will probably center on local and regional natural resource problems. We will use published materials, workshops and outreach programs to help general citizens understand and do something about natural resource problems.

N. REPORT SUBMITTED BY: Carl Brown
September 27, 1979

A. TITLE: ENERGY AND MAN'S ENVIRONMENT (IDAHO)

B. COORDINATOR (Idaho): Dennis D. Cartwright
443½ Veatch
Moscow, ID 83843
208/882-8407

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, population education, urban environmental education

D. HEADQUARTERS (National): 0224 Southwest Hamilton
Portland, OR 97201
503/226-7131

E. PRINCIPAL STAFF: 10 parttime

F. HISTORY:

1) Principal originators:
   The Northwest Electric Power Association
   State Departments of Education in Oregon, Washington, Idaho and Utah
2) Date and place of initiation:
   October, 1974
3) Funding sources utilized:
   The Utility Industry, State Departments of Education, Office of Energy, School Districts
4) Overall purpose:
   To develop an in-service teacher-prepared and classroom tested energy education curriculum materials.

G. OBJECTIVES: (See national project report)

H. MATERIALS:

1) Materials produced:
   a) Primary
      Activity Guides
      Two notebooks of lesson activity plans (K-3 and 4-6)
   b) Secondary
      Activity Guides
      Two notebooks of lesson activity plans (7-9 and 10-12)
   c) Other
      bibliography, film guide
2) Free materials available:
   Samplers

3) Materials purchasable:
   Lesson Plans -- grade levels 1-3, 4-6, 7-9, 10-12
   $24 each; set of four $86.40
   Set of 7 activity guides, $25.00
4) New instructional materials being developed:
   For grade levels K-12
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 150
2) Teachers adopting all of the materials: unknown
3) Teachers using some of the materials: 3,000
4) Total students using all of the materials: unknown
5) Totals stated are estimated:
6) Selected schools where the program materials are being used:

Vallivue School
(Rhea Zaldain)
Route 8
Caldwell, ID 83605

Falls Valley School
(Lynn Olsen)
2455 Virlow Street
Idaho Falls, ID 83401

Russell School
(Wally Driscoll)
119 North Adams
Moscow, ID 83843

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshops (½ to 2 days)
   Summer Institute (1 to 2 weeks)
   Evening classes a possible future program
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Energy and Man's Environment sampler and sample lesson plans; newsletter for workshop participants commercially available through national headquarters.

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Northwest Regional Education Laboratory
   Brigham Young University doctoral study;
   Education Commission of the States
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

The major focus of our program has been to develop curriculum material for the K-12 classroom and introduce that material through workshops and/or college courses to teachers. These workshops usually include an awareness component as well as a chance to participate in classroom activities. We do not portray a point of view, but rather present a balanced program. We feel this is the approach teachers should take in presenting energy education to their students.

M. PLANS FOR THE FUTURE:

We will continue to do inservice and preservice workshops and college courses for teachers. We will also provide awareness sessions for students and the general public.

N. REPORT SUBMITTED BY: Dennis D. Cartwright
September 11, 1979

A. TITLE: TOUCH OF NATURE ENVIRONMENTAL CENTER
ENVIRONMENTAL EDUCATION PROGRAMS

B. DIRECTOR (Environmental Education Programs):

Jerry Culen
Southern Illinois University
Touch of Nature Center
Carbondale, IL 62901
618/457-0348

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITES FOR VISITORS TO SEE:
Facilities and programs run year round; visitors welcome

E. PRINCIPAL STAFF: 3

F. HISTORY:

1) Principal originators:
Outdoor Education and Recreation Department, Southern Illinois University, and L. B. Sharp
2) Date and place of initiation:
Early 1950's.
3) Funding sources utilized:
Federal, state and activity-generated funds
4) Overall purpose:
To provide environmental education programs for individuals, K-adult, in order that they may become environmentally knowledgable citizens that are willing to work toward a dynamic equilibrium with the environment.

G. OBJECTIVES:

Intructional Objectives:

1) Presentation of materials, interpretations, and experiences in such a way as to be meaningful to the students' own lives, situations, and communities.
2) A wide range of instructional techniques that include role-playing, simulation games, indepth studies and interpretive knowledge.

3) Activities with and in a variety of environments ranging from the pristine to the highly managed, the rural to urban and the unspoiled to the abused.
4) Open discussion of personal and cultural values, how these values originated, and how the values affect behavior.
5) Encouraging students to specify their own values and motives, take a position which is consistent with these, and defend their position from an environmental point of view.
6) Studies of a problem solving nature under the direction of a qualified individual concerning an environmental situation.
7) Present to participants methods and alternative courses of action to take concerning environmental problems.
8) Evaluation of alternative courses of action with respect to both immediate and long range consequences to the environment.

Working objectives:

1) To stimulate research relative to the programs and concerning the environment.
2) Coordinating, identifying, and inventorying resources, both natural and human at Touch of Nature.
3) To develop appropriate curricular materials for use with workshops, school groups and staff.
4) To instruct and guide field workers in the instruction of environmental education and leadership skills.
5) To develop programs (workshops) to help citizens understand and minimize their impact on the natural surroundings and to develop positive values and attitudes with regards to the environment.
6) Continual evaluation of these programs by staff and participants.

H. MATERIALS:

1) Materials produced:
   We have a K-12 Curriculum in Environmental Education for our program. These are a series of activities designed with the hands-on approach in mind.
2) Free materials available:
   Brochure and pamphlets describing program.
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   More K-12 as described in H-1 above.
5) Materials anticipated for development:
   Teachers' manuals.
6) Commercial associations: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (2 days)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITES TO DATE:

The Touch of Nature Environmental Center is a 6,500 acre complex adjacent to Giant City State Park in the heart of the Shawnee National Forest. A cooperative agreement with Crab Orchard National Wildlife Refuge provides access to 10,000 acres of wilderness, including a recently designated Wildlands Area, established under the Eastern Wilderness Act. Touch of Nature also borders the foothills of the Ozark Mountains and is close to the Wild Scenic Riverways of Missouri and Arkansas.

The major programs at Touch of Nature, including Underway, the Environmental Workshops, the Handicapped and Senior Citizens Programs, are environmentally and experientially oriented. Touch of Nature Environmental Center, formerly the Southern Illinois University Outdoor Laboratory, was established in 1954 with the assistance of L. B. Sharp, often called the father of Outdoor Education, In 1972, the Southern Illinois University Outdoor Laboratory received the National Environmental Education Landmark Award, presented by the National Park Service.

The Environmental Workshops are experiential education programs that offer unique learning encounters for students and adults. Each session stresses sensory and individual development and problem-solving situations that enable participants to become aware of their interdependency and effect upon the environment.

Purpose of the programs is to acquaint participants with our major environmental problems and possible solutions for them.

Emphasis on man's role in degrading, improving, restoring, and maintaining his environment.

Design of the program helps to develop an individual's awareness, understanding, commitment and personal environmental ethic by providing open-minded situations through active participation in outdoor activites.

M. PLANS FOR THE FUTURE:

Additional activities are planned.

N. REPORT SUBMITTED BY: Jerry Culen
September 2, 1979

ERIC Document:

ED 179 495 The Role of the Wilderness Experience in the Treatment of the Youthful Offender: A Conference Report

A. TITLE: NUCLEAR RADIATION PROJECT STUDY

B. DIRECTOR: William D. Phelps
Crystal Lake Central High School
45 West Franklin Street
Crystal Lake, IL 60014
815/459-2505, ext. 70

C. DESCRIPTORS: Energy education, environmental education, natural resources

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Laboratory with gamma irradiator and various detectors

E. PRINCIPAL STAFF: 6

CONSULTANT SERVICES UTILIZED: Readers for text evaluation

F. HISTORY:

1) Principal originators:
   William Phelps and Art Baker
2) Date and place of initiation:
   1972; Crystal Lake
3) Funding sources utilized:
   D.U.T.E., State of Illinois
4) Overall purpose:
   Develop a course in nuclear radiation for the average high school student

G. OBJECTIVES:

1) Produce better informed citizens who respect rather than fear radiation;
2) Provide background for citizens to make choices about their environment;
3) Provide interdisciplinary course for high school students
4) Help students develop precise work techniques
5) Emphasize need for continuous attention to good safety practices
6) To make students aware of vocational opportunities in nuclear radiation.

H. MATERIALS:

1) Materials produced:
   Secondary (7-12) -- Text: Introduction to Nucleonics
   Teacher's Guide

2) Free materials available:
   Teacher's guide
3) Materials purchasable:
   Text (price depends on number ordered)
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association:
   Textbook and teacher's guide have been made available for commercial publishing.

I. IMPLEMENTATION:

1) Schools using entire set of materials: 12-15
2) Teachers adopting all of the materials: 12-15
3) Teachers using some of the materials: 12-15
4) Total students using all of the materials: 240 (per semester)
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Janesville Parker High School
3125 Mineral Point Road
Janesville, WI 53545

Riverview High School
4850 Lords Lane
Sarasota, FL 33581

Clover Park High School
11023 Gravelly Lake Drive S.W.
Lakewood Center, WA 98499

Joliet West High School
Joliet, IL 60231

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No
3) Pre-service training program: No

K. MATERIALS EVALUATION: (For reading level and accuracy)

L. SUMMARY OF ACTIVITIES TO DATE:

We have revised some sections of the text. We use these as hand outs to accompany text. When it is published, it will include revisions.

M. PLANS FOR THE FUTURE:

Awaiting book publishing.

N. REPORT SUBMITTED BY: William Phelps
November 7, 1979

ERIC Documents:

ED 182 145	Introduction to Nucleonics: A Laboratory Course
ED 182 146	Introduction to Nucleonics: A Laboratory Course, Teacher's Guide

A. TITLE: C.R.E.A.T.I.O.N. -- CONCERN REGARDING THE ENVIRONMENT AND TECHNOLOGY IN OUR NATION/ NEIGHBORHOOD

B. DIRECTOR: Jean G. Hauser
LaSalle-Peru Township High School
541 Chartres Street
LaSalle, IL 61301
815/223-5715 or 223-6596

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population, urban environmental education

ADDITIONAL DESCRIPTORS: Pollution, urbanization and zoning, solid waste, waste water, parks and recreation, urban management

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: A demonstration center, where teachers can see the program in operation

E. PRINCIPAL STAFF: 6

CONSULTANT SERVICES UTILIZED: Authorities in the field as expert panel to assist in test validation; also, research consultants for design

F. HISTORY:

1) Principal originators:
   Original proposal from LaSalle-Peru Township High School, LaSalle, IL
2) Date and place of initiation:
   Fiscal year 74-75
3) Funding sources utilized:
   Illinois Office of Education, 1974-75, Title IVc grants; US Office of Education, 1978-80, National Diffusion Network
4) Overall purpose:
   The major goal of CONCERN is to develop students as citizens who will hold a strong environmental ethic. By this we mean citizens who will support the values and actions needed to retard people's negative impact on the planet.

G. OBJECTIVES:

Each student studies one unit under each of the four broad categories of land use, urban management, energy, and pollution. All units stress universal objectives (interdependence, impact, maintenance, quality of life, and improvement) as well as category and specific unit objectives. Each unit has its own objective sheet and its own pre and post-test. Objective sheets are used to monitor student progress through the material on a competency based design.

H. MATERIALS:

1) Materials produced:
   Secondary -- Teacher's manual, answer book, 15 curriculum units, four activity handbooks, pre/post tests for all units, unit objective sheets for all units, an overall test (Levels of Environmental Understanding Test), and various audio/videotapes.
2) Free materials available:
   Project brochure
3) Materials purchasable:
   This program is designed to be accessed through the National or Illinois Diffusion Networks. Contact your state department of public instruction for information.
4) New instructional materials being developed:
   For grade levels 7 and 8
5) Materials anticipated for development:
   Wildlife unit
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 50
2) Teachers adopting all of the materials: 65
3) Teachers using some of the materials: Not known
4) Total students using all of the materials: About 3,000
5) Totals stated are definite
6) Selected schools where the program materials are being used:

J. F. Kennedy High School
6325 West 56th Street
Chicago, IL 60638

Amboy High School
Metcalf and Hawley Sts.
Amboy, IL 61310

Wheaton High School
701 Thomas
Wheaton, IL 60189

Dixon High School
Lincoln Statue Drive
Lincoln, IL 61021

J. TEACHER PREPARATION:

1) Consultative service available: Yes

2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs: Yes
    Workshop (2 days)
    Summer Institute (2 days)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
    Materials are available to teachers we have trained to be "certified trainers" for the project. A policy statement on certification is available.

K. MATERIALS EVALUATION:

1) Evaluator(s):
    Illinois Office of Education and Joint Dissemination and Review Panel (JDRP) of US Office of Education/ National Institute of Education
2) Pertinent published research on evaluation:
    JDRP report is available from the project
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

The project spent three initial years in the development and research of the curriculum and methodologies. At the end of that period the project received state validation from the Illinois Office of Education.

The project is in its third year on the Illinois diffusion network, and its second year on the national diffusion network. We are currently working with teachers in eight states in the nation, and will expand that during Fiscal Year 1979-80. The project staff appears at numerous conferences, trains teachers, provides evaluation and follow-up assistance.

Visitors are always welcome at the project, and additional information may be obtained by calling Jean Hauser, project director.

M. PLANS FOR THE FUTURE:

Training "turnkey" trainers to use and demonstrate; train with teachers in other states. Houston, Texas, Region IV, has just begun with the concept, and we expect to see it spread.

Videotape follow-up tapes are being used to keep trainers on target with their presentations. Entire workshop plans are being suggested for their use.

N. REPORT SUBMITTED BY: Jean G. Hauser
September 25, 1979

Previous Directory References: 1975, 1976

ERIC Document:

ED 180 756 Project CREATION Proposal Submitted to the Joint Dissemination and Review Panel of the N.D.N.

A. TITLE: GEOLOGY IS

B. DIRECTOR: Rion D. Turley
O'Fallon Township High School
600 South Smiley
O'Fallon, IL 62269
618/632-3507

C. DESCRIPTORS: Energy education, environmental education, natural resources

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Demonstration site (classroom)

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED: Used consultants in subject matter, audio/visual work and curriculum design.

F. HISTORY:

1) Principal originators:
   Rion D. Turley and Loran D. Marlow
2) Date and place of initiation:
   1976; O'Fallon Township High School
3) Funding sources utilized:
   Title IVc, ESEA
4) Overall purpose:
   To offer secondary students a program in the geological sciences.

G. OBJECTIVES:

To provide secondary students understandings about their physical environment.

H. MATERIALS:

1) Materials produced:
   Secondary -- text, lab sheets, audio/visual packets and teachers' guide (grades 9-12)
2) Free materials available:
   Sample units and course descriptions; above (H-1) materials free to adopters in Illinois.
3) Materials purchasable:
   Listed above (H-1); prices not yet set; available from Geology Is office at O'Fallon Township High School
4) New instructional material being developed:
   For grade levels 9-12
5) Materials anticipated for development:
   Revision of text and new audio/visual materials to supplement the text

I. IMPLEMENTATION:

1) Schools using entire set of materials: 6
2) Teachers adopting all of the materials: 6
3) Teachers using some of the materials: 9-10
4) Total students using all of the materials: 400
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

O'Fallon Township High School
600 South Smiley
O'Fallon, IL 62269

Marissa High School
Marissa, IL 62257
(c/o Helen Walters)

Carbondale High School East
Carbondale, IL 62901
(c/o Dan Reusch)

Edwardsville High School
145 West Street
Edwardsville, IL 62025
(c/o Jim Price)

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   - Workshop (2 days)
   - Consultation as needed
5) Available pre-service and/or inservice teaching materials for educators to use in preparing teachers:
   - Teacher's guide

K. MATERIALS EVALUATION:

1) Evaluator(s):
   - Illinois Office of Education
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

First three years spent in development of materials and course content. Evaluation on-going through that period. Received validation by Illinois Office of Education in May 1979. Are now beginning first year as a demonstration project.

M. PLANS FOR THE FUTURE:

Continued updating and evaluation of curriculum content and methodology.

N. REPORT SUBMITTED BY: Rion D. Turley
September 1, 1979

A. TITLE: ENVIRONMENTAL EDUCATION COMMUNITY OPPORTUNITY FOR STEWARDSHIP (ECOS)

B. DIRECTOR: Mrs. Lynn Sprick
District #172
1444 Maine Street
Quincy, IL 62301
217/223-8352 or 223-8700, ext. 55

C. DESCRIPTORS: Conservation education, energy education, environmental education, outdoor education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1 director, 20 teacher/trainers

CONSULTANT SERVICES UTILIZED: With the national project

F. HISTORY:

1) Principal originators:
   Dr. Frank Thompson, National ECOS (Yorktown Heights, New York); Mrs. Lynn Sprick, Quincy, IL, ECOS
2) Date and place of initiation:
   January, 1976
3) Funding sources utilized:
   ESEA Title IVc
4) Overall purpose:
   To assist school districts in the development of their environmental education program.

G. OBJECTIVES:

1) To increase a student's environmental awareness at local, state and national levels
2) To infuse the existing school curriculum with environmental education concepts
3) To commit students and staff to some environmental education projects (stewardship).

H. MATERIALS:

1) Materials produced:
   K-12 -- Exploring for Action
   Applying Environmental Awareness
   Sense Awareness through the Environment
   Environmental Curriculum Guide
   Environmental Awareness Booklet
   Environmental Screening Continuum
   Grade 7 -- Interdisciplinary Land Use Study
2) Free materials available:
   Numerous teacher-developed lessons
3) Materials purchasable:
   Presently the above (H-1) materials are available to our adopters.

4) New instructional materials being developed:
   Energy materials for grade levels K-12
5) Materials anticipated for development: None
6) Commercial associations: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 27
2) Teachers adopting all of the materials: 216
3) Teachers using some of the materials:
   Difficult to determine; possibly 1000
4) Total students using all of the materials: 12,000
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Hamel Elementary School
Hamel, IL 61046
(c/o Jan Lewis)

Hawthorne Elementary School
200 Glendale
Wheeling, IL 60090
(c/o Gregg Crocker)

Carmi High School
800 West Maine
Carmi, IL 62831
(c/o Steve Martin)

Morton Junior High School
225 East Jackson
Morton, IL 61550
(c/o Henry Ort)

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1 to 2 days)
   Spring Institute (1 day)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Yes

K. MATERIALS EVALUATION:

1) Evaluator(s):
   State of Illinois Office of Education
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITES TO DATE:

Quincy ECOS, an acronym for Environmental Education Community Opportunity for Stewardship, is an adoption of the nationally validated ECOS Project from Yorktown Heights, New York. National ECOS has been in operation since 1971 and has over five hundred adoptions/adaptions across the United States. The Quincy adoption began July 1, 1976, and Quincy ECOS joined the Illinois Diffusion Network on July 1, 1977.

The diffusion process enables Quincy ECOS to assist other Illinois school districts in establishing an environmental education program. Through the Illinois Diffusion Network a one-day awareness workshop, a two to three-day curriculum development workshop, materials, start-up monies and the expertise of ECOS staff are available to adopter districts. ECOS offers to adopters a low cost, action-oriented environmental education program tailored to the individual needs and resources of each school-community.

Basic to the ECOS process is the belief that established systems resist change and yet in every community there exists a cadre or force of students and citizens filled with the idealism and potential competency to be involved in the solution of community problems. Change requires the broadest possible committment of intellectual and materials resources. Key decision-makers must be committed to a program before it can be successfully implemented and research indicates that infusion into existing curricula is more successful than the introduction of new courses. Individuals need observable accomplishments and yet good educational practices within a system tend to go unnoticed -- resulting in lost potential. These factors all influence the ECOS process.

M. PLANS FOR THE FUTURE:

Development of additional curriculum materials and stewardship activities for our district.

N. REPORT SUBMITTED BY: Mrs. Lynn Sprick
October 1, 1979

A. TITLE: AMERICA'S POSSIBLE ENERGY CHOICES (APEC)

B. COORDINATORS: Paul Meyers and Frank Witt
121 South Stanley Street
Rockford, IL 61102
815/964-4810

C. DESCRIPTORS: Energy education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
30 minute transparency talk on our energy choices
30 minute training film on how to teach a course in energy education

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED: Two professors from Northern Illinois University, one an environmentalist who gave curriculum advice, one a testing expert who advised on creating and evaluating a testing instrument

F. HISTORY:

1) Principal originators:
   Frank Parrino, Superintendent of Schools, Boone-Winnebago County; Steve Tuthill, Assistant Superintendent of Schools for Environmental Education, Boone-Winnebago County
2) Date and place of initiation:
   August, 1976
3) Funding sources utilized:
   Funds from the Illinois Office of Education that originally came from Health, Education and Welfare.
4) Overall purpose:
   To explain to intermediate (grades 5-8) and high school students the choices we have in solving our energy problems and the pros and cons of those choices

G. OBJECTIVES: Same as F-4, above

H. MATERIALS:

1) Materials produced:
   Primary -- 11 color transparencies on our energy choices
   53 slides showing the building of a nuclear power plant
   Secondary -- 80-page booklet, "America's Energy Options"

32 color transparencies on our energy choices
53 slides showing the building of a nuclear power plant
2 tapes on pros and cons of nuclear energy

2) Free materials available:
   Flier describing the project in detail
3) Materials purchasable:
   None to date; plan on availablity in Fall, 1980
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 100
2) Teachers adopting all of the materials: 105
3) Teachers using some of the materials: unknown
4) Total students using all of the materials: 6,000
5) Totals stated are estimated
6) Selected schools where the program materials are being used:

Hallstrom School
1300 17th Street
Rockford, IL 61108

Jefferson High School
5125 35th Street
Rockford, IL 61109

Belvidere High School
1500 East Avenue
Belvidere, IL 61008

Harlem South High School
735 Windsor Road
Loves Park, IL 61111

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (10 hours; 5 hours per day)
   Evening classes (1 session)

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Title IVc Validation team from Indiana (May 4, 1979)
2) Pertinent published research on evaluation: None
3) Unpublished research summary:
   Title IVc Report

L. SUMMARY OF ACTIVITIES TO DATE:

35 high school teachers have taught the course to over 2,000 high school students; 74 intermediate teachers have

taught the course to over 4,000 intermediate students. In both situations students have been pre and posttested with statistically significant results in the case of each classroom of students.

M. PLANS FOR THE FUTURE:

Update the curriculum in the light of new energy developments.

N. REPORT SUBMITTED BY: Frank Witt
September 4, 1979

A. TITLE: DISTRICT 54 NATURE CENTER

B. DIRECTOR: James A. Johnson
320 West Wise Road
Schaumburg, IL 60193
312/893-1192

C. DESCRIPTORS: Environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Interpretive building with greenhouse, resource library, native animals (live and stuffed) and seasonal displays, 12 acres of woods, meadow, marsh, gardens and prairie plots.

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED: A committee of teachers, administrators and community members helped develop the project.

F. HISTORY:

1) Principal originators:
   The committee referred to in E above.
2) Date and place of initiation:
   1970; Schaumburg Township Schools
3) Funding sources utilized:
   All funding is through Community Consolidated School District #54, Schaumburg, IL
4) Overall purpose:
   The purpose of the environmental education program is to provide an opportunity for students and teachers of Schaumburg Township Elementary Schools to become aware of their natural surroundings and its interactions.

G. OBJECTIVES:

To have fun in an outdoor setting; to provide environmental instruction for community groups; to become aware of local resource problems.

H. MATERIALS:

1) Materials produced:
   Primary -- Nature trail guides
   Kindergarten nature handbook
   Assorted activity sheets
   Other -- Brochure

2) Free materials available:
   Listed above (H-1)
3) Materials purchasable: None
4) New instructional materials being developed:
   For grade levels K-3, 4-6
5) Materials anticipated for development:
   Updated activity sheets, trail guides
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 28
2) Teachers adopting all of the materials: not applicable
3) Teachers using some of the materials: 500
4) Total students using all of the materials:
   Target population of 16,000
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:
   All the districts' 28 schools are using these materials.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (for District 54 staff)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

All environmental education materials are designed to be interdisciplinary; therefore, they are incorporated in our science, social studies and language arts curriculum. Students obtain background information at their base school. Then a field trip to District 54 Nature Center provides them with a firsthand, hands-on experience in nature and field studies.

M. PLANS FOR THE FUTURE:

Additional environmental education materials to be incorporated in the District's curriculum

N. REPORT SUBMITTED BY: James A. Johnson
September 10, 1979

A. TITLE: C.A.R.E. FOR SPACESHIP EARTH (CONSERVATION, AWARENESS, AND RESPONSIBILITY OF ENERGY)

B. DIRECTOR: James A. Johnson
District 54
320 West Wise Road
Schaumburg, IL 60193
312/893-1890

C. DESCRIPTORS: Energy education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Nature Center facilities with resource library, live and stuffed animals, greenhouse and seasonal displays.

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED: Project evaluators and curriculum consultants

F. HISTORY:

1) Principal originators:
   Eleanor Thorsen, Assistant Superintendent, Curriculum;
   James Johnson, Environmental Education Specialist;
   Richard Ammentorp, teacher.
2) Date and place of initiation:
   1977; School district 54
3) Funding sources utilized:
   Title IV C, ESEA, through the Illinois Office of Education
4) Overall purpose:
   C.A.R.E. for SPACESHIP EARTH is an intensive and experiential program emphasizing Conservation, Awareness and Responsibility of Energy, thus the acronym C.A.R.E. The long range goal of this project is to increase the awareness level and understanding of the energy situation in teachers, students and their respective families in suburban Schaumburg Township.

G. OBJECTIVES:

To increase the energy awareness level of a 250 student cadre, the student's peers and the 25 teachers in the project.

H. MATERIALS:

1) Materials produced:
   Primary (K-6) -- Manual for C.A.R.E. for SPACESHIP EARTH Program. This manual includes general description, student selection process, activities and Energy Encounter Resident Program. In the process of constant revision and updating during the implementation period.
2) Free materials available:
   General description of the project, energy activities and energy encounter handout
3) Materials purchasable: None
4) New instructional materials being developed:
   For grade levels in the intermediate school
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 25
2) Teachers adopting all of the materials: 25
3) Teachers using some of the materials: Not applicable
4) Total students using all of the materials: 250
5) Totals stated are definite.
6) Selected schools where the program materials are being used:

Churchill
1520 North Jones Road
Schaumburg, IL 60195

MacArthur
1800 Chippendale Road
Hoffman Estates, IL 60195

Hillcrest
500 Hillcrest Blvd.
Hoffman Estates, IL 60195

Hanover
1451 Cypress Avenue
Hanover Park, IL 60103

J. TEACHER PREPARATION:

1) Consultative service available: Yes, in project area only
2) In-service education program: Yes, in project area only
3) Pre-service training program: No, not at this time
4) Kinds of preparation programs: None indicated

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The Energy Education Coordinator and the Program Development Team developed curriculum materials to be used at the twelve energy sessions conducted during this project year. These materials relate to the energy situation with regard to:

-- the sources of energy
-- its historical development
-- its uses

- -- how energy is measured
- -- energy problems; present and future
- -- its technological development
- -- its effects on the environment
- -- energy alternatives

The teacher cadre was in-serviced on energy education programs to better acquaint them with the energy situation. During this project year, they, along with their respective student cadre, will take part in the twelve energy sessions incorporating films, simulation games, demonstrations, role playing, drama experiences, peer teaching, experiments, problem solving, research and observation. Each cadre will return to their respective base building and involve their entire student body in energy awareness and energy responsibility activities.

The culmination event for the Energy Cadre will be an energy experiential program known as Energy Encounter. Energy Encounter incorporates an energy-based curriculum into a resident outdoor education setting. Students will be taking part in group decision-making processes with respect to everyday lifestyles based on a pre-determined amount of energy units. They will be required to budget their energy use for five days and four nights. The students will also be involved in lessons throughout the week-long experience involving all curricular areas with energy education incorporated into each subject area.

M. PLANS FOR THE FUTURE:

More extensive energy materials for teacher and students in the project. These materials will be disseminated via the Illinois Diffusion Network at the completion of the experimental project.

N. REPORT SUBMITTED BY: James A. Johnson
September 7, 1979

A. TITLE: ECO-CENTER DIFFUSION PROJECT
ECO-CENTER COOPERATIVE

B. DIRECTOR: Dennis Etnyre
Upper Mississippi River ECO-Center
Thomson, IL 61285
815/259-3282

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education.

ADDITIONAL DESCRIPTORS: Adoption program

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: Implemented under Title III, ESEA, 1975

F. HISTORY:

1) Principal originators:
   Howard Kennedy, Superintendent
2) Date and place of initiation:
   July, 1972
3) Funding sources utilized:
   Title III, ESEA, 1972-75; Cooperative 1975-79, local funds from eight districts; Diffusion Project, Title IVc, 1975-79
4) Overall purpose:
   Cooperative -- To provide a comprehensive environmental education program for students of Carroll County
   Diffusion -- Help other districts adopt/adapt Eco-Center programs

G. OBJECTIVES:

Increase knowledge of environmental concepts.
Increase teacher involvement in environmental education.
Develop environmental acceptable attitudes toward conservation of resources.

H. MATERIALS:

1) Materials produced:
   a. Primary (K-6)
      101 Environmental Education Activities in
      Science, Math, Art, Language, Social Studies
      Teacher's Guide for Environmental Education (5th Grade)

K-8 Curriculum Guide
- b. Secondary (7-12)
  Operation Awareness -- A High School Summer Adventure Course
- c. Other
  Bibliography of Environmental Education Materials
  Inservice Training Manual

2) Free materials available:
Description of Cooperative Program and Diffusion Program

3) Materials purchasable:
- a. Environmental Education -- An Interdisciplinary Approach for the Intermediate Level
  A 140 page Teachers' Guide to Fifth Grade Environmental Education. The Guide contains field experiences, school site activities, and classroom lessons with behavioral objectives and evaluation method identified. The guide has many ideas for setting up a field program and coordinating it with the ongoing classwork, appropriate for the intermediate level. Available at a cost of $3.50.
- b. Environmental Education Curriculum Guide for K-8 - An 84 page guide produced by a committee of elementary teachers. It is the purpose of the guide to coordinate environmental education in the elementary grades (K-8). The concepts are sequentially developed in six major areas: air, land, water, animal life, plants, and recreation; with suggested activities listed for teaching these concepts. Available for $1.50.
- c. Bibliography of Environmental Education Materials - A listing of actual materials in the ECO-Center reference library. The listing contains many free materials and the better commercial materials currently being produced. Available at a cost of $1.00.
- d. 101 Environmental Education Activities
  Booklets:
  Art and Music, 12 activities, $1.00
  Language Arts, 20 activities, $1.00
  Mathematics, 4 activities, $1.00
  Science, 39 activities, $1.50
  Science and social studies (interdisciplinary), 14 activities, $1.00
  Social studies, 12 activities, $1.00
  For entire set of booklets, $4.00.
- e. Inservice Training Manual
  A manual designed to allow local school districts to conduct an inservice training program for teachers without the aid of an outside resource. The manual is built around the ECO-Center's programs and views of environmental and outdoor education. Cost, $3.50.

4) New instructional materials being developed:
   Wildflower slides for specific areas, for grades 4-8.
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 45
2) Teachers adopting all of the materials: 50
3) Teachers using some of the materials: 130
4) Total students using all of the materials: Unknown
5) Totals stated are estimated, based on 48 adoptions and eight original schools.
6) Selected schools where the program materials are being used:

Damiansville District 62
R. R. 1
Albers, IL 62215

Albany Grade School
Albany, IL 61230

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (2 days)
   Summer Institute (2-4 days for curriculum development or in place of workshop)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Inservice training manual

K. MATERIALS EVALUATION:

1) Evaluator(s):
   "Experts in the field"
2) Pertinent published research on evaluation:
   National Validation Report 1974
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

The ECO-Center is a national validated K-12 environmental and outdoor education project. The original project, funded through Title III, ESEA, was designed to bring about curriculum reform in these areas:

1) An inter-disciplinary approach to environmental education emphasizing the interrelationship of man and nature
2) Utilization of resources outside the classrooms.

3) A focus on environmental problems and man's ability to identify and resolve them.

Key ingredients to the curriculum reform include: Inservice training of classroom teachers, identification and development of area resources for field experiences, development of local outdoor education facilities, locally produced and tested curriculum activities based on fundamental environmental concepts, and involving area agencies and organizations in environmental education. Program emphasis has been at the fourth, fifth and sixth grade level with a second thrust above and below these levels.

The Diffusion Project is funded under Title IVc to help districts develop and improve their environmental and outdoor education programs. The ECO-Center provides services to the adopting district to aid them in implementing their environmental education program.

M. PLANS FOR THE FUTURE:

Continue the Cooperative Program; 1979-80 will be last year for the Diffusion Program.

N. REPORT SUBMITTED BY: Dennis Etnyre
September 4, 1979

Previous Directory References: 1973, 1975, 1976

ERIC Documents:

ED 093 529	Upper Mississippi River ECO-Center Environmental Education Project. First Year Report, Project Year 72-73
ED 096 085	Teacher's Guide to Fifth Grade Environmental Education
ED 165 970	Environmental Education Inservice Training Packet for the Intermediate Level
ED 165 971	Evaluation and Progress Report for "Operation Awareness"--A High School Adventure Course in Environmental Studies via Canoe-Camping
ED 165 972	101 Environmental Education Activities, Booklet 1--Art and Music Activities
ED 165 973	101 Environmental Education Activities, Booklet 2--Language Arts Activities
ED 165 974	101 Environmental Education Activities, Booklet 3--Mathematics Activities
ED 165 975	101 Environmental Education Activities, Booklet 4--Science Activities
ED 165 976	101 Environmental Education Activities, Booklet 5--Science and Social Studies (Interdisciplinary) Activities

ED 165 977	101 Environmental Education Activities, Booklet 6--Social Studies Activities
ED 168 802	A Select Bibliography of Environmental Education Materials

A. TITLE: ANITA PURVIS NATURE CENTER

B. DIRECTOR: Ruth Gladding
Coordinator of Environmental Programs
Urbana Park District
1505 North Broadway
Urbana, IL 61801
217/384-4062

C. DESCRIPTORS: Conservation education, environmental education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Exhibits

E. PRINCIPAL STAFF: 1 full-time, 1 half-time

F. HISTORY:

1) Principal originators:
   Urbana Park District and community organizations
2) Date and place of initiation:
   1974; Urbana
3) Funding sources utilized:
   Museum tax collected by Urbana Park District; donations to Anita Purvis Memorial Fund; Bureau of Outdoor Recreation Grant
4) Overall purpose:
   To carry out school and public programs in the areas of conservation and environmental education.

G. OBJECTIVES: None indicated

H. MATERIALS:

1) Materials produced:
   Primary (K-6) -- handouts for classroom use
   Other -- guide to trail in Busey Woods
2) Free materials available:
   An assortment of handouts on local natural history; short projects for classroom use.
3) Materials purchasable:
   Other handouts, 5¢ each, too numerous to list.
4) New instructional materials being developed:
   For the general public, a guide to woods in winter
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
   We offer in-service training for the purpose of acquainting teachers with our building and resources
3) Pre-service training program: None indicated
4) Kinds of preparation programs:
   Workshop

K. MATERIALS EVALUATION: Not applicable

L. SUMMARY OF ACTIVITIES TO DATE:

The program consists of a nature-center type outreach program. About 900 children tour the adjacent woods yearly; they are led by volunteer guides trained at the nature center. Children and adults also come to the center for programs on a variety of subjects. The written materials have developed for particular use with these programs. As a result, they are specially suited for use in this area. We have not developed a comprehensive, articulated set of materials for any age group.

M. PLANS FOR THE FUTURE:

The Urbana Schools have recently adopted the ECO-Center project. We will be working with teachers to implement this program. Nature center activities will continue to focus on field trips and workshop type programs.

N. REPORT SUBMITTED BY: Ruth Gladding
September 28, 1979

A. TITLE: ENERGY EDUCATION CURRICULUM PROJECT

B. DIRECTORS: Kathy Lane/Joe Wright
Indiana Department of Public Instruction
Room 229, State House Building
Indianapolis, IN 46204
317/927-0111

C. DESCRIPTORS: Environmental education

D. HEADQUARTERS: Division of Curriculum
3833 North Meridian Street
Indianapolis, IN 46202
317/927-0111

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED: We have contracted with Dr. Judith Gillespie, Workshop in Political Theory and Policy Analysis, Indiana University in Bloomington, to write the curriculum.

F. HISTORY:

1) Principal originators:
   Joe Wright, John Harrold, and Kathy Lane, Division of Curriculum
2) Date and place of initiation:
   July, 1978
3) Funding sources utilized:
   The Indiana Energy Groups funds the project
4) Overall purpose:
   To design a K-12 interdisciplinary energy education curriculum and introduce it through inservice programs.

G. OBJECTIVES:

1) Coordinate the development and distribution of a K-12 interdisciplinary energy education curriculum;
2) Develop a training package for classroom teachers and school administrators.

H. MATERIALS:

1) Materials produced:
   Primary (K-6) -- An Energy Education Curriculum for Elementary Grades has already been written and printed.

2) Free materials available:
   Limited number of the following energy education curriculum for the elementary grades:
      Unit I -- K-1; Unit II -- 2-3; Unit III, 4-6.
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   Comic book for middle grades
5) Materials anticipated for development:
   Middle grade curriculum which should be ready by May, 1980; school year 1980-81, plans for a 9-12 curriculum.
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 100
2) Teachers adopting all of the materials: 500
3) Teachers using some of the materials: 2,000
4) Total students using all of the materials: 60,000
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Thomas A. Edison Elementary 1240 West Ray Street Indianapolis, IN 46221	Franklin Elementary 201 North Griffith Blvd. Girffith, IN 46319
Homecroft Elementary 1550 Tulip Drive Indianpolis, IN 46227	Central Elementary 301 E. Eighth Street Michigan City, IN 46360

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1 hour to 1 day)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Units I, II and III for K-6 educators

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Division of Curriculum, Department of Public Instruction
2) Pertinent published research on evaluation:
   A Study of the Impact of Selected Lessons From the Elementary Energy Curriculum on Students

L. SUMMARY OF ACTIVITIES TO DATE:

In July, 1978, the Division of Curriculum of the Department of Public Instruction in cooperation with the Department of Commerce Energy Group began the design, development, and evaluation of energy education materials for grades K-6. As a result of this cooperative effort, An Energy Curriculum for the Elementary Grades was published, training workshops have been conducted, and an evaluation study was completed.

The elementary energy materials are designed to be integrated into social studies and science instruction with additional teaching suggestions for use in math and language arts instruction. An Energy Curriculum for the Elementary Grades consists of 54 lessons which reinforce currently established school programs using a critical issue of the times. The first unit of 18 lessons, "Energy and You" is designed for use with kindergarten and first grade. The second unit of 18 lessons, "Energy and Your Community" is for second and third grades. The final unit of 18 lessons, "Energy in Action" is for fourth, fifth, and sixth grades. Bibliographic materials and assessment activities are also included with each unit. This curriculum encourages sequential and sustained instruction about energy and energy conservation. Each lesson includes objectives, teaching activities, and stories and illustrations for students, such as the three page cartoon activity, "Carefully Consuming Carol".

The curriculum was written primarily by Judith Gillespie of Indiana University, Bloomington, under a contract with the Department. A steering committee from the Division of Curriculum provided direction and advice to the writers and artist. Teachers, and students from Indianapolis, Gary, Griffith, New Harmony and Michigan piloted the draft version in 1978.

According to research done by the energy education consultants, Indiana is one of the few states to develop a comprehensive elementary energy curriculum designed for integration into existing classroom instruction. Some states such as Minnesota, Iowa, and Oklahoma have provided teaching resources, but they are not based upon a unified framework that would lead to sustained instruction of energy concepts.

Other states such as Kansas, Montana, and Rhode Island have passed legislation recommending and promoting energy education. According to a report by the Education Commission of the States, The Status of State Energy Policy, March, 1979, 21 state education agencies reported that they have made rules or recommendations advocating energy education programs as "permitted instructional modules" at both the elementary and secondary level.

The majority of states have chosen to develop energy education materials to be used on a voluntary basis. Six state education agencies have included energy in their environmental education program. Others have published brochures and calendars or have advocated the use of commercial or federal programs. Few have developed comprehensive curriculum materials that could be integrated into the curriculum on a regular basis.

During October and November, 1978, the energy education consultants sponsored 10 energy education workshops throughout the state to introduce the project and acquaint teachers and administrators with its goals and activities. The 324 workshop participants responded to a survey assessing their knowledge and attitudes about energy and their commitment toward energy education. It was found that knowledge about energy problems and commitment to energy education were significantly related.

In May, 1979, a follow-up survey was sent to the 258 classroom teachers who had attended the fall workshops. Of the teacher participants, 59% returned the survey which assessed the use of the materials, support for energy education and the impact of the materials. Of those who returned the survey, 68% reported that they had taught at least four of the sample lessons, the maximum number available for their grade level. When asked about plans to use the energy lessons during the next school year, 89% reported that they are likely to do so. Also, 57% of the respondents reported that the other teachers in their building supported teaching lessons about energy. Of those who responded, 75% reported that their community supported teaching lessons about energy, and 91% reported that their principal supported teaching lessons about energy. Of those who taught the lessons, 84% reported that the lessons affected the energy attitudes of their students.

The energy education consultants were also invited to conduct training sessions at twenty sites in the state and region during the 1978-79 school year. Approximately 550 educators attended these sessions and received sample lessons from the Energy Education Curriculum Project.

In addition, approximately 500 requests for the elementary energy materials were received from educators in Indiana, other states, and other countries. In June, 1979, these requests for An Energy Curriculum for the Elementary Grades were filled. All public and non-public elementary principals in the state also received the complete publication with a request to make it available to teachers. Principals were also given instructions on how teachers could request a copy of the unit appropriate to their grade level.

In order to gain a better understanding of the effectiveness of the energy lessons, a small impact study was carried out in May, 1979. The study involved twelve classrooms and 289 students in six Indiana communities. Six teachers who had attended the fall workshops agreed to teach six specific lessons from the energy curriculum. Two teachers used lessons from Unit I, two used lessons from Unit 2, and two used Unit 3. For each of these teachers, cooperating teachers were found at the same school and grade level who gave their students the same pretests and posttests without teaching the lessons. These students therefore provided a control group for comparison.

An analysis of change scores (analysis of covariance was the statistical procedure used) from pretests to posttest showed significant gains on the energy knowledge test as a result of studying the lessons. This was true for all three units. In addition, change scores showed significantly more positive attitudes on the energy attitudes test as a result of studying the lessons in Unit 2 (grades 2-3). This was a very small study. Additional trials with larger numbers of teachers are needed to get a more complete understanding of the impact of the lessons on energy knowledge and attitudes. For a preliminary effort, however, this study of six energy lessons revealed an encouraging degree of effectiveness with students.

Presently, work is progressing on energy education materials for middle grade students. The focus is on social studies instruction, particularly US History and world cultures. Interdisciplinary cooperation is encouraged through the use of suggestions for practical arts, language arts and science teachers. Eight student lessons and an energy conservation comic were tested in the Spring of 1979 and are now being revised to reflect suggestions made by the pilot teachers. Again, the materials are intended to enhance current school programs while teaching energy concepts.

In October and November, 1979, the Department sponsored 11 workshops to introduce middle grade educators to the energy materials and resources being developed. It is anticipated that similar efforts will be undertaken for high school energy education in 1980-81.

M. PLANS FOR THE FUTURE:

In-service training; curriculum development, grades 9-12; state planning.

N. REPORT SUBMITTED BY: Joe Wright
Energy Education Consultant
August 31, 1979

ERIC Documents:

ED 167 355	A Plan for an Energy Curriculum for the Elementary Grades
ED 168 877	Lessons from an Energy Curriculum for the Elementary Grades
ED 173 086	An Energy Curriculum for the Elementary Grades. Unit I-Energy and You. Unit II-Energy and Your Community. Unit III-Energy in Action

A. TITLE: MAPLE OUTDOOR CURRICULUM LABORATORY

B. DIRECTOR: Brenda Johnston
Maple Elementary School
429 Division Street
Jeffersonville, IN 47140
812/282-1222

C. DESCRIPTORS: Environmental education, natural resources, outdoor education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Tour and curriculum materials

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED: Indiana State Department of Public Instruction; National Audubon Society, Mr. Mike Shannon; Wilson Education Center, Jeffersonville, Indiana, Ken Potts, Tom Payne; Indiana University Southeast, Dr. John Moody; Clark County Soil and Water Conservation Office.

F. HISTORY:

1) Principal originators:
   Brenda Johnston, Gil Newton, with Maple staff parents and students
2) Date and place of initiation:
   1976-77 school year
3) Funding sources utilized:
   Indiana Department of Public Instruction; Division of Innovative Education, ESEA Title IVc.
4) Overall purpose:
   To make teachers aware of methods of using the outdoor school environment to motivate students' achievement in basic subjects (i.e. math and reading);
   To involve the community in educating children;
   To make children aware of the effect they can have on the environment and their community.

G. OBJECTIVES:

1) To develop an outdoor curriculum laboratory;
2) to inservice teachers in use of outdoor curriculum lab;
3) to aquire free or inexpensive environmental and outdoor teaching aids;
4) to develop resource guide for greater Clark County elementary teachers including field trips, guest speakers and a list of printed materials;

5) to develop teacher resource kits that incorporate outdoor education and basic curriculum;
6) to develop and circulate curriculum newsletter.

H. MATERIALS:

1) Materials produced:
    Primary (K-6) Teacher Resource Kits:
        a. Anthropology and Archeology of Southern Indiana
        b. School Gardening
        c. Camping -- Day and overnight
        d. Insect (General)
        e. Butterflies and Moths
        f. Geology of Southern Indiana
        g. Honey Bees
        h. Plants (General)
        i. Land forms
    Other materials:
        Newsletter (2 per year); Resource Guide in loose-leaf form, with listing of printed resources, field trips, guest speakers, free and inexpensive teaching aids.
2) Free materials available:
    Newsletters; resource guide
3) Materials purchasable: None indicated
4) New instructional materials being developed:
    For grades levels K-6
5) Materials anticipated for development:
    Teacher Resource Kits
        a. Animals (General)
        b. Astronomy
        c. Energy
        d. Environmental Issues
        e. Developing and using outdoor sites
        f. Developing and using teacher resource kits
6) Commercial associations: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 1
2) Teachers adopting all of the materials: 15
3) Teachers using some of the materials: 40
4) Total students using all of the materials: 500
5) Totals stated are estimated
6) Selected schools where the program materials are being used:

Parkview Middle School
c/o Debbie White
Jeffersonville, IN

Museum of Natural History
c/o Amy Lowen
Louisville, KY

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshops (2 hour)

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Brenda Johnston, Projector Director; Wilson Education Center; Indiana Department of Public Instruction, Title IVc.
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

1) Development of outdoor site:
   1.7 acres, 56 varieties of trees and shrubs; amphitheatre for 350; archeology dig site; gardening program; jogging trail; creative play area; beautification projects around the school; bird houses.
2) Inservice program for teachers
3) Development of resource kits:
   Users guide; objectives; suggested lesson plans; bibliography; evaluation; "hands on" materials.

M. PLANS FOR THE FUTURE:

1) More teacher resource kits
2) Heavier use of outdoor site
3) Inservice of teachers in greater Clark School System.

N. REPORT SUBMITTED BY: Brenda Johnston
October 1, 1979

A. TITLE: COASTAL ZONE AWARENESS -- ENVIRONMENTAL EDUCATION

B. DIRECTORS: John Edington/Art Haverstock
Munster High School
8808 Columbia Avenue
Munster, IN 46321
219/836-1450

C. DESCRIPTORS: Environmental education, marine education, natural resources, population education, urban environmental education

ADDITIONAL DESCRIPTORS: Freshwater education, land use, trade-offs.

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 6

CONSULTANT SERVICES UTILIZED: Dr. Robert Rivers, Purdue Calumet, Hammond, Indiana, curriculum development and proposal development.

F. HISTORY:

1) Principal originators:
   Mr. Edington, Mr. Haverstock, Mr. Ullman, and Dr. Rivers
2) Date and place of initiation:
   Basic project has been in action for five years.
3) Funding sources utilized:
   No outside funding to date
4) Overall purpose:
   To allow the students to develop an understanding of the delicate ecological balance which exists and to see the impact of increased population and its multiple demands on the environment.
   To give the student laboratory experience in school as well as at extensive field laboratory experiences at Shedd Aquarium, Indiana Dunes, and Big Pine Key, Florida.

G. OBJECTIVES:

The specific course objectives below are used by Munster High school in its environmental education course. When the student has completed the course he/she will be able to demonstrate:

1) The scientific approach to problem solving.
2) The general principles of ecology.
3) The sociological factors of increased population on the local and regional ecosystem.

4) The historical geographic development of the Indiana Dunes and the Florida Keys.
5) The ecological factors of the Indiana Dunes and Florida Keys.
6) The human impact on the Indiana Dunes and Florida Keys.
7) To compare and contrast the Dunes and the Keys with respect to human impact.
8) To compare and contrast the ecology of the Dunes and the Keys.
9) The values of land, water and air use.
10) The steps necessary to control and prevent pollution.
11) To judge environmental quality of life both physically and sociologically.
12) The techniques of recording data, tabulating statistics, the developing logical conclusions from statistics.
13) The proper procedure for the production of a written research paper to document findings.
14) To become physically fit and maintain that fitness during prolonged field work.

H. MATERIALS:

1) Materials produced:
    Secondary (7-12) -- This will be the level but no materials are available for distribution now.
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed:
    For secondary (7-12) grade levels
5) Materials anticipated for development:
    Instructional materials related to:
    a. the impact of human settlements on the coastal environment.
    b. the impact of energy needs and production, transportation and industry on the coastal environment.
    c. the key issues related to environmental quality in the coastal areas.
    d. the various trade-offs necessary to continue social development and yet preserve the environment.
    e. the similarities and differences between geographically removed coastal areas (local and remote).
6) Commercial association: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION: Not applicable

K. MATERIALS EVALUATION: Not applicable

L. SUMMARY OF ACTIVITIES TO DATE:

Over the past five years Munster High School has been developing and piloting a set of curriculum materials with goals similar to those of the proposed project but not as great in scope and purpose. It is a two semester course offering credit for each semester under the title of "Specialized Science" as described by the Indiana State Department of Public Instruction. Assisted by Purdue University Calumet - Institute for Environmental Education (PUC-IEE), this curricular material will become the foundation for the proposed materials development. PUC-IEE with assistance from the Indiana Department of Public Instruction will alter and develop the materials into modular units of one to three weeks which could be given in sequence (as at Munster High School), utilized in a varied sequence, or independently presented a module or two at a time in existing curricular structure as desired by a particular school system. These modular units, centered on problem solving strategy, will be developed around various sciences, social sciences, and language arts, which will be indicative of the multidisciplinary and interdisciplinary impact of "real" environmental education.

M. PLANS FOR THE FUTURE:

Development of a unitized, year long, environmental education curriculum.

N. REPORT SUBMITTED BY: John Edington
Co-director
November 15, 1979

A. TITLE: TOTAL ENVIRONMENTAL EDUCATION

B. DIRECTOR: Dr. Glen R. Linnert
Former Project Director
Assistant Principal
Floyd Central High School
Route 2 - Box 445 A
New Albany, IN
812/923-8811

C. DESCRIPTORS: Environmental education

(D, E, F, G, H, I, J, K not applicable)

L. SUMMARY OF ACTIVITES TO DATE:

Total Environment Education, during its existence, was an ESEA Title IVc validated project, funded for four years. While project training and project materials are still in use in many school districts, the project itself is no longer funded or staffed and distribution materials are no longer available.

N. REPORT SUBMITTED BY: Dr. Glenn R. Linnert
November 21, 1979

Previous Directory References: 1973, 1975, 1976

ERIC Documents:

ED 071 868	Total Environmental Education: An Open Design to Real Life Learning Experiences
ED 093 621	Total Environment Education

A. TITLE: FRESHWATER ECOLOGY

B. DIRECTOR: John A. Naab
Curriculum Coordinator
Lakeland Community School Corporation
P.O. Box 338
Syracuse, IN 46567

C. DESCRIPTORS: Environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: Indiana Department of Public Instruction and ECO-Center

F. HISTORY:

1) Principal originators:
   William Kitson; Robert Kitson; Karl Keper
2) Date and place of initiation:
   September, 1975
3) Funding sources utilized:
   ESEA Title IVc, and local
4) Overall purpose: None indicated

G. OBJECTIVES: None indicated

H. MATERIALS:

1) Materials produced:
   Secondary (7-12) -- Freshwater Ecology
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None

I. IMPLEMENTATION: Statewide

J. TEACHER PREPARATION: None; no funding is available for this

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE: None

M. PLANS FOR THE FUTURE: No

N. REPORT SUBMITTED BY: John A. Naab
September 7, 1979

A. TITLE: ASHERWOOD

B. DIRECTOR: Jerry Sweeten
Route #3 - Box 214
Wabash, IN 46992
219-563-8148 or 7846

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
160-acre outdoor environmental education facility

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: Ball State University Natural Resources Department; and, State of Indiana Department of Public Instruction

F. HISTORY:

1) Principal originators:
   School administrators and concerned citizens
2) Date and place of initiation:
   1974; Asherwood
3) Funding sources utilized:
   Local and federal funding
4) Overall purpose:
   To provide students formal opportunities to study the outdoors.

G. OBJECTIVES:

To provide formal outdoor education activities for all elementary students in a sequential, integrated curriculum at a school owned and developed center.

H. MATERIALS:

1) Materials produced:
   Primary (K-6) -- Guidebook
2) Free materials available:
   Guidebook
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. MATERIALS IMPLEMENTATION:

1) Schools using entire set of materials: 13
2) Teachers adopting all of the materials: 200
3) Teachers using some of the materials: 200
4) Total students using all of the materials: 4,300
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Allen Elementary School
1115 E. Bradford Street
Marion, IN 46952

Center Elementary School
4415 S. Nebraska Street
Marion, IN 46952

Clayton-Brownlee Elementary School
1215 S. Washington Street
Marion, In 46952

Kendall Elementary School
2009 W. Kem Road
Marion, IN 46952

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1 to 2 days)
   Summer Institute (has been offered in the past; not at the present time)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Every elementary student in this school district has visited Asherwood at least once per school year for the past three years. Many high school science classes have utilized the facility as well. Non-school groups, such as the Audubon Society and Scouts have also used Asherwood.

M. PLANS FOR THE FUTURE:

Possible overnight camping activities

N. REPORT SUBMITTED BY: W. Ray Lockwood
Assistant Superintendent
Marion Community Schools
August 30, 1979

Previous Directory Reference: 1976

A. TITLE: PROJECT ECO -- AN ENVIRONMENTAL CURRICULUM OPPORTUNITY

B. DIRECTOR: Dr. Luther L. Kiser
Assistant Superintendent
Ames Community Schools
120 South Kellogg
Ames, IA 50010
515/232-3400

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Two mobile learning laboratories housed in 40-foot semi trailers.

E. PRINCIPAL STAFF: 2

F. HISTORY:

1) Principal originators:
The staff of the Ames Community Schools, including the Assistant Superintendent, the Science Coordinator, and members of the Science Vertical Curriculum Committee.
2) Date and place of initiation:
Fall, 1971; Ames, Iowa
3) Funding sources utilized:
Project ECO was started with the assistance of Title III, ESEA, grant through the Iowa Department of Public Instruction
4) Overall purpose:
The purpose of the project is to broaden and enrich the base of activities in elementary and secondary schools relative to a knowledge of the environment and an awareness of the need for its preservation.

G. OBJECTIVES:

1) Students will engage in activities appropriate to their level of maturation which will include observation, investigation and evaluation of a variety of ecological relationships and conservation practices in central Iowa in order to develop the concept of stewardship of natural resources.
2) Teachers will support the major objective and assist in its accomplishment as a result of the activities of this project.

H. MATERIALS:

1) Materials produced:
   - a. Primary (K-6)
     Field activity packets, coordinated as to grade level, time of year and location
   - b. Secondary (7-12)
     Field activity packets, grades 7-9, coordinated as to grade level, time of year, and location.
   - c. Other
     Guide sheets for local historical museums and science centers for use by teachers; key to common snakes of Iowa; guide to wildflowers of Iowa, illustrated; guide to winter birds of Iowa, etc.
2) Free materials available:
   Brochure depicting the mobile laboratory; two page handout with brief description of the project.
3) Materials purchasable:
   Learning Activity Packets -- set of 30 for $20.00 or $1.00 each
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 10 in Ames
2) Teachers adopting all of the materials: 150 each year
3) Teachers using some of the materials: unknown
4) Total students using all of the materials: 2,500 annually in Ames
5) Totals stated are definite.
6) Selected schools where the program materials are being used:

Fellows Elementary School
1400 McKinley Avenue
Ames, IA 50010

Edwards Elementary School
3622 Woodland Street
Ames, IA 50010

Northwood Elementary School
601 28th Street
Ames, IA 50010

Ames Junior High School
321 State Street
Ames, IA 50010

J. TEACHER PREPARATION:

1) Consultative service available: Yes
   Not on an on-going basis, but available.
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (½ to 1 day)
   Summer Institute (3 weeks)
   Evening Classes (12 hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Learning Activity Packets

K. MATERIALS EVALUATION:

1) Evaluator(s):
   US Office of Education, I/V/D process
2) Pertinent published research on evaluation:
   Luther L. Kiser and Kenneth E. Frazier's work "Project ECO - An Environmental Curriculum Opportunity," published in Current Issues in Environmental Education, III, R. H. McCabe, Editor; The National Association for Environmental Education, Miami, Florida, 1977.
   Frederick DeLuca, Luther L. Kiser, and Kenneth E. Frazier's work, "Environmental Education and the Interrelationships Among Attitude, Knowledge, Achievement, and Piagetian Levels," published in Current Issues in Environmental Education, IV, Craig B. Davis and Arthur Sacks, Editors; The National Association for Environmental Education, Miami, Florida, 1978.
3) Unpublished research summary:
   Harold W. Hulleman's "Effects of In-Service Training on Elementary Teachers Pertaining to Science Achievement and Attitudes Toward Environmental Science" unpublished dissertation from Iowa State University Ames, Iowa, 1972.

L. SUMMARY OF ACTIVITIES TO DATE:

Project ECO, the environmental curriculum opportunities program of the Ames Community Schools, is currently in its ninth year of operation and continuing to successfully meet its original goals. It has been locally funded since the expiration of Title III funding five years ago. The program is a planned, coordinated exposure to environmental processes in the Ames area. The focus continues to be on students in grades 1, 3, 5, 7 and 9, and at this point several thousand students have had from one to five years of exposure to Project ECO. Each class has a fall, winter and spring field trip at which time the classroom teacher makes use of the field experience to extend and enrich the year-long environmental education curriculum. While the project was initiated with the assistance of highly qualified, well prepared curriculum coordinators, the current staff consists of two beginning teachers. Classroom teachers through the several years of staff development activities have developed sufficient skills to direct their own ECO learning experiences.

M. PLANS FOR THE FUTURE:

Guidelines published by the Iowa Department of Public Instruction call for the teaching of "conservation of natural resources and environmental awareness" at all grade levels, one through eight. Project ECO has been attempting to help teachers of this state develop materials and expertise to meet these new guidelines by conducting workshops in the field and working with several writing teams in the development of curricular materials for our schools.

N. REPORT SUBMITTED BY: Luther Kiser
September 18, 1979

Previous Directory References: 1972, 1973, 1975, 1976

ERIC Document:

ED 080 344 Teacher Resource Guide, Project ECO

A. TITLE: DEPARTMENT OF OUTDOOR EDUCATION

B. DIRECTOR: Don W. Jurgs
Bettendorf Community Schools
800 23rd Street
Bettendorf, IA 52722
319/355-5381, ext. 317

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 2

F. HISTORY:

1) Principal originators:
   Don W. Jurgs
2) Date and place of initiation:
   April, 1967; Eettendorf, Iowa
3) Funding sources utilized:
   ESEA, Title III
4) Overall purpose:
   To provide outdoor and community familization experiences for grades K-12 in the Bettendorf, Iowa, Community Schools.

G. OBJECTIVES:

1) To provide students with an opportunity to study the natural resources of the community under natural, or field conditions which cannot be duplicated in the classroom.
2) To stress attitudes towards the natural world rather than memorization of factual materials.
3) To provide some understanding of the industrial resources of our community through observation and visitation.
4) To provide an introduction into some lifetime sports, such as canoeing, skiing, caving, rock climbing, orienteering.

H. MATERIALS:

1) Materials produced:
   Secondary (7-12) -- High school outdoor semester course guide
   Other -- School camp teacher handbook; school camp counselor handbook
2) Free materials available: None
3) Materials purchasable:
   High School Outdoor Semester Course Guide $5.00
   School camp handbooks, $2.00 each

4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial associations: None

I. MATERIALS IMPLEMENTATION:

1) Schools using entire set of materials: None
2) Teachers adopting all of the materials: None
3) Teachers using some of the materials: 35
4) Total students using all of the materials: 90
5) Totals stated are estimated.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No
3) Pre-service training program: No

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Each of the two outdoor education teachers has been assigned a school bus which they drive. These teachers are available for field trips for all grades in the system. These trips are usually taken by elementary classes however and average 100 to 150 half day trips per teacher per year. Besides these field trips the following special programs are conducted every year:

1) 6th grade resident outdoor school (5 days), Spring
2) 7th grade resident outdoor school (4 days), Winter
3) 8th grade tent camping program (6 days), Summer
4) High school backpacking program (8 days), Summer
5) High school wilderness canoe program (9 days), Summer
6) Grades 1, 2, and 3 nature school (5 days) Summer day camp
7) 8th grade caving program (1 day), Spring
8) High school learn to ski (1 day), Winter
9) Environmental encounters class for high school (1 semester)

M. PLANS FOR THE FUTURE:

Plan to start an orienteering program this year

N. REPORT SUBMITTED BY: Don W. Jurgs
Director, Outdoor Education
September 7, 1979

Previous Directory Reference: 1973

A. TITLE: ENVIRONMENTAL ENCOUNTERS

B. DIRECTOR: Gary Goldstein
Metro High School - East
404 17th Street S.E.
Cedar Rapids, IA 52403
319/398-2193, or 2194

C. DESCRIPTORS: Environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Visitors are welcome to visit any class sessions where experience based activities are taking place.

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED: Gary Goldstein and Bill DesMarais have received training at National Outdoor Leadership School, Lander, Wyoming, that helped prepare them to teach this course and all three instructors have attended numerous outdoor and environmental workshops.

F. HISTORY:

1) Principal originators:
   Gary Goldstein, Bill DesMarais, Curt Abdouch
2) Date and place of initiation:
   Piloted Spring 1974; Cedar Rapids, Iowa
3) Funding sources utilized:
   Funding has included one summer mini-grant to develop course goals, outline, lesson plans, etc. and individual high schools had provided monies for equipment, substitute teachers and buses for trips.
4) Overall purpose:
   Immerse students in the natural environment by way of a 12 week experientially and interdisciplinary course. The course will help students develop outdoor skills and awareness to assist them in developing a philosophy and lifestyle which is in harmony with the concepts of humans as a participant with, rather than a master of nature.

G. OBJECTIVES:

1) Offer an opportunity to develop an increased awareness, knowledge, and understanding of environmental processes and problems.

2) Provide continual challenges which will lead to personal evaluation and development of motivation, leadership, resourcefulness, cooperation and adaptability.
3) Develop in students a more positive feeling about themselves as a means of improving communication with others and nature.
4) Develop an increased awareness and appreciation of the resources and recreational opportunities here in Iowa. Coupled with this is the desire to increase knowledge of outdoor leisure time skills, such as camping, hiking, fishing and canoeing.
5) Encouraging participants to move through the landscape in less environmentally destructive ways.
6) Develop in participants a sense of group cooperation, initiative and trust.
7) Improve writing skills by keeping journals of all class activities and also to help students improve their abilities to share their ideas and feelings with others in the class as well as those not in this program.
8) Develop in all participants a more holistic view of their surroundings. That is, they will see things as interconnected and interrelated and appreciate more the significance of this concept as they try to live more ecologically sound lives.
9) Encourage lifelong physical and mental fitness and conditioning.
10) Assist students in learning more socially appropriate ways of dealing with tension such as using solitude, meditation, recreational activities.
11) Develop leadership skills such as ability to make sound judgments, problem solving, planning and carrying out responsibilities, etc.

H. MATERIALS:

1) Materials produced:
    Secondary (7-12) -- two issues of a student-staff magazine entitled, "Reaching Out", consisting of how to articles, examples of journals, information on outdoor activities and equipment, art and poetry, book reviews, etc.
    Other -- In addition, I have a copy of the course objectives, goals, and course outline in addition to the evaluation form used. Furthermore, I have compiled a collection of outdoor-environmental education activities.
2) Free materials: None
3) Materials purchasable:
    All materials can be purchased through Metro High School
    Magazines -- Volume I, $1.50; Volume II, $2.50
    Course goals, objectives, lesson plans, evaulation, $2.00
    Activity Packet, $2.00

4) New instructional materials being developed:
In the process of synthesizing the course and outdoor education materials into a booklet form.

5) Materials anticipated for development:
Future plans call for students to assist in developing guides to several local rivers in northeast Iowa much like the guide to Upper Iowa River and also we are thinking of working on initiating a hiking trail system and guide to trails in northeast Iowa.

6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 4-6
2) Teachers adopting all of the materials: 4-6
3) Teachers using some of the materials: 6-10
4) Total students using all of the materials: 150-200
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Gary Goldstein
Metro High School
404 17th Street N.E.
Cedar Rapids, IA 52403

Craig Collins
Kennedy High School
Wenig Road N.E.
Cedar Rapids, IA 52402

Bill DesMarais
Washington High School
Forest Drive S.E.
Cedar Rapids, IA 52403

Bill Collett
Armstrong High School
800 23 Street
Bettendorf, IA 52722

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Informal
3) Pre-service training program: Informal
4) Kinds of preparation programs:
Workshop (possible for future)
Summer Institute (possible for future)
Evening Classes (possible for future)

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

Since the fall of 1974 the Environmental Encounters course has been offered at least twice during the school year in the Cedar Rapids school system. Beginning in 1977 it was being offered three and sometimes four times during the school year. The high school students at Kennedy High School produced two magazines.

Beginning in 1976 the program was offered also during the summer. In 1976 Gary Goldstein led ten high school students on a three week mountaineering trip to Wyoming. In 1977, 1978, and 1979 trips of 15-17 participants (age range 17 to 60) were led by Gary Goldstein and Gary Lindsay to Canada on wilderness canoe trips sponsored by Kirkwood Community College in Cedar Rapids, Iowa.

High school trips, as part of the program, have been usually four and five days of backpacking and canoeing to far northeast Iowa.

M. PLANS FOR THE FUTURE:

Canoeing local rivers around Cedar Rapids and developing river guides and cross country skiing and hiking in northeast Iowa. We are thinking of developing a winter outdoor education program.

N. REPORT SUBMITTED BY: Gary Goldstein
September 29, 1979

A. TITLE: ENVIRONMENTAL EDUCATION PROGRAM FOR WARREN COUNTY CONSERVATION BOARD

B. DIRECTOR: Margaret Kuchenreuther
Warren County Conservation Board
301 West Second Avenue
Indianola, IA 50125
515/961-6169

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education, urban environmental education

ADDITIONAL DESCRIPTORS: Park interpretation, historical interpretation, agricultural interpretation

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE:
A limited interpretive displays and facilities in the conservation areas but no nature center as such.

E. PRINCIPAL STAFF: 1 full-time, 2 part-time

F. HISTORY:

1) Principal originators:
Warren County Conservation Board received a one-year CETA grant to assess need for and begin a program in line with those needs.
2) Date and place of initiation:
August, 1977; Warren County
3) Funding sources utilized:
CETA; county tax monies
4) Overall purpose:
This program has been established to promote an environmental ethic through programs encouraging an appreciation of our natural resources, an understanding of the interdependency between man and the land and a motivation to seek solutions to environmental issues.

G. OBJECTIVES:

To produce citizens who are knowledgeable of natural environments, of environmental problems, and motivated to work toward solutions to such problems. The environmental education program should help the students to acquire the following attributes:

An appreciation of natural areas leading to behavior which is in harmony with nature.

Knowledge of ecosystems and recognition of his/her integral part of these systems.

An understanding of how man's actions effect the natural environment.

An awareness of environmental problems and issues confronting the world today.

Attitudes of concern for wise use of our natural resources.

H. MATERIALS:

1) Materials produced:
   Primary (K-6) -- Nature's Cycles, 4th grade workbook by Maura O'Connor
2) Free materials available: None indicated
3) Materials purchasable: None to date
4) New instructional materials being developed:
   A complete set of workbooks K-6 is presently at press and will be available for sale. We do not know when they will be ready. Maura O'Connor is the author of all of these.
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION: None indicated

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (Four 4 hour sessions)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Using materials developed by other groups in teaching teachers, i.e. Project Learning Tree, Energy Conservation Activity Packet (Department of Public Instruction, Iowa Energy Policy Council).

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

All schools in the county have been contacted and some sort of program has been run in most of them.

The environmental education program has three thrusts:

1) Teacher training -- to get teachers to incorporate environmental education into their everyday classroom activities.
2) Field trips with students -- to give students hands-on activities in the field and provide an example to teachers of ways they can approach environmental topics.
3) General public programming -- including display-type interpretation in our parks (wildlife planting, woodlot management demonstrations, interpretation of an old farmstead, Indian mound, etc) as well as guided interpretive walks and workshops for the general public on at least a monthly basis. We also write a bi-weekly column for the local newspapers on an environmental topic.

M. PLANS FOR THE FUTURE:

We will continue along much the same lines. I would like to have teachers doing much more of their own planning and implementation, so a move towards more teacher workshops and less work with students. We are developing outdoor classrooms on school sites, to cut down on busing. We also plan expanded development and interpretation of our parks.

N. REPORT SUBMITTED BY: Margaret Kuchenreuther
November 15, 1979

A. TITLE: ELEMENTARY ENVIRONMENTAL EDUCATION ACTIVITIES (E3) AND TEACHER IN-SERVICE MODEL-ENVIRONMENTAL STUDIES (TIMES)

B. DIRECTORS: Dr. Richard Doyle (Director of Elementary Education)
David L. Fagle (Science coordinator K-12)
Marshalltown Community School District
317 Columbus Drive
Marshalltown, IA 50158
515/752-4583

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, urban environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: (Number not indicated)

CONSULTANT SERVICES UTILIZED: Ken Fraizer (Project ECO, Ames, Iowa) as a functional consultant

F. HISTORY:

1) Principal originators:
   David L. Fagle
2) Date and place of initiation:
   1975; Marshalltown in-service
3) Funding sources utilized:
   ESEA, Title III
4) Overall purpose:
   Improvement of environmental education instruction in meeting these goals (modified after the philosophy of the Marshalltown Elementary Science Guide):

   a. Elementary environmental education should help each child develop and fulfill his or her intellectual, emotional, and physical needs.
   b. elementary environmental education should excite his/her intellectual and/or natural curiosity through direct experiences about his world around him/her inside and outside the classroom.
   c. elementary environmental education should develop skills necessary to do the processes of learning as related to life science, earth science, and physical science.
   d. elementary environmental education should promote attitudes of inquiry that facilitate learning through experiments and verbal interchange.
   e. elementary environmental education should correlate all disciplines of the curriculum to develop a humanitarian attitude towards life and environmental stewardship.

f. elementary environmental education should sharpen perceptions through the child's previous experience or a created experience to promote positive behavior related to the environment in which he lives.
g. elementary environmental education should stimulate the students to think critically and creatively when using accumulated data to solve a problem.
h. elementary environmental education should help the child develop his conceptual structure of the environment, continuously growing from concrete experiences to abstract interpretations.
i. elementary environmental education should allow each child to reach his maximum potential of understanding and experiencing the environmental processes.

G. OBJECTIVES:

1) The student, having observed an organism's life cycle can describe verbally the parent-offspring concept.
2) The student, using the type, form, and properties of material objects and organisms will by the use of the senses, be able to classify by manually grouping or verbally describing.
3) A student, after having interacted with all aspects of the environment both physical and animate, will be able to demonstrate by writing or discussing how organisms interact.
4) Through experimentation a student will have experience which will allow him to create at least two energy models.
5) The student, following a series of demonstrations and experiences of interactions of the physical and the biological world will identify and record evidence of interactions.
6) The students, given a complex physical system and a biological system and tools will reduce it to its component sub-systems.
7) Students who have had an opportunity to study areas of earth science, will be able to interpret and describe space, weather and geology as they apply to his/her life and the environment.
8) The student, given selected diagrams, pictures or models, will demonstrate the adaptive designs of organisms as related to the ecology of the environment.
9) The student, having experimented and observed organism cells will demonstrate an understanding of their characteristics and functions.
10) The student, having gathered data concerning the present ecological conditions, will reasonably predict and report evidence of change that will be apparent in the total environment and if needed hypothesize a correction to the change.
11) The student will demonstrate ability to use scientific tools to show a concept, principle and generalization as related to a scientific problem.

12) The student, after having worked with the concepts of relative positions of stationary and moving objects will be able to interpret observations related to the concepts.
13) The student, having experimented with observed physical and chemical changes, will be able to record and explain the changes which occurred.
14) Given a situation, the student will be able to hypothesize, test with controlled variables, record data, interpret data, draw conclusions, define operationally how an experiment will work and then make generalized conclusions and report findings and be able to apply these conclusions.
15) The student will integrate ideas from environmental education with ideas from all disciplines demonstrated through verbal interaction and creative projects.
16) The student will exhibit attitudes which will lead to stewardship of the environment.

H. MATERIALS:

1) Materials produced:
   Elementary Environmental Education book being produced; will be available as book or units.
2) Free materials that are available: None
3) Materials purchasable:
   When available; Elementary Environmental Education book ($12.00); Unit A (K-2), $4.00; Unit B (3-4) $4.00; Unit C (5-6) $4.00.
4) New instructional materials being developed: (see above)
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 11 (elementary)
2) Teachers adopting all of the materials: 165+
3) Teachers using some of the materials: 165+
4) Total students using all of the materials: 3,000+
5) Totals stated are definite.
6) Selected schools where the program materials are being used:

Hoglan Elementary
South 3rd Avenue and Southridge Road
Marshalltown, IA 50158

Fisher Elementary
2001 South Fourth Street
Marshalltown, IA 50158

Albion Elementary
Albion, IA 50005

Glick Elementary
South Third and Linn Streets
Marshalltown, IA 50158

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    - Workshop (1 day plus)
    - Summer Institute (1 week plus)
    - Evening Classes (3 hours plus)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
    - Elementary Environmental Education Guide and Environmental Education Equipment

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

The Teacher In-service Model-Environmental Studies Project (TIMES) was funded for the 1975-76 school year. The model was designed to take advantage of the district's interest in the area of environmental education. The work included involvement with Project ECO in Ames, Iowa, Project ECOS in New York and the US Forestry team as well as classroom experiences. Project TIMES provided workshop sessions for teachers on eight Saturday mornings. Teachers were paid a stipend to attend and complete the workshop. Selection of teachers was based on interest in the project and school representation.

The project, taught by Marshalltown staff members, was designed to motivate teachers to use environmental education in their teaching. As the resulting environmental education program developed, the general public was invited to participate on planning committees.

Three elementary schools served in the project for data analysis; two schools were considered experimental and one control. A pre-test and post-test experimental design was used to assess students' understanding of ecology.

The Elementary Environmental Education Kit has resulted from the on going environmental activities. Teachers involved in the above described workshops pooled their experiences to develop this activity kit. The kit contains cards written with a multidisciplinary approach to environmental education.

M. PLANS FOR THE FUTURE: To continue present activities

N. REPORT SUBMITTED BY: David L. Fagle
September 4, 1979

A. TITLE: INTERDISCIPLINARY ENVIRONMENTAL EDUCATION WORKSHOP

B. DIRECTOR: John K. Strickler
State and Extension Forestry
2610 Claflin Road
Manhattan, KS 66502

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education, urban environmental education.

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: (volunteer basis)

CONSULTANT SERVICES UTILIZED: Forest service personnel at first two workshops

F. HISTORY:

1) Principal originators:
   Design and format from Forest Service and Department of Agriculture
2) Date and place of initiation:
   September, 1975 (first in Kansas); Rock Springs Ranch
3) Funding sources utilized:
   Forest Service in beginning; now self-sustaining.
4) Overall purpose:
   To provide training in the process and problem-solving approach to learning, using the environment as a teaching vehicle.

G. OBJECTIVES: (Same as F-4 above)

H. MATERIALS:

Participants in the workshop receive a notebook with lesson plans and numerous other materials related to environmental education. Available only through the workshop; same can be obtained from the US Department of Agriculture, Forest Service.

I. IMPLEMENTATION:

1) It is estimated that over 500 teachers are using some of the materials.
2) Selected schools where the program materials are being used:

Broken Arrow Grade School
(c/o Sylvia Scoby)
2704 Louisiana
Lawrence, KS 66044

Manhattan High School
(c/o Gary Ward or Dru Clarke)
2100 Poyntz
Manhattan, KS 66502

J. TEACHER PREPARATION:

The nature of the program is geared towards teacher preparation through the three and one-half day workshop.

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

Twelve of the Interdisciplinary Environmental Education Workshops have been held since 1975. They have been attended by over 500 teachers from all grade levels and disciplines plus natural resource agency personnel. One to two hours of graduate credit is available from the six Kansas Board of Regents universities.

M. PLANS FOR THE FUTURE:

One to two workshops per year.

N. REPORT SUBMITTED BY: John K. Strickler
October 31, 1979

A. TITLE: ENERGY AND MAN'S ENVIRONMENT (EME)
KANSAS AND MISSOURI SERVICE AREA

B. DIRECTOR (State): Ronald E. Converse
9024 Grandview
Overland Park, KS 66212
913/341-6731

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources

D. HEADQUARTERS (National): Energy and Man's Environment
0224 Southwest Hamilton, Suite 301
Portland, OR 97201
503/226-7131

E. PRINCIPAL STAFF: 15 part-time

F. HISTORY (State):

1) Principal originators:
   Kansas City Power and Light contracted to National EME in Portland, OR
2) Date and place of initiation:
   1979; Kansas City
3) Funding sources utilized:
   Kansas City Power and Light Company (investor owned utility); individual school districts (both direct funds and contributed services)
4) Overall purpose:
   To provide teacher inservice and materials for energy literacy.

G. OBJECTIVES:

1) Prepare and assist educators in the implementation of energy concepts in all disciplines and at all grade levels.
2) Develop balanced and objective instructional and reference material for energy education.
3) Provide information, resources and assistance to educators, students, college and university faculties, and the general public.

H. MATERIALS: National EME materials used (Portland, OR)

I. IMPLEMENTATION:

1) Schools using entire set of materials: 47
2) Teachers adopting all of the materials: Not applicable
3) Teachers using some of the materials: 267

4) Total students using all of the materials: Not applicable
5) Totals stated are definite.
6) Selected schools where the program materials are being used:

Shawnee Mission N.W. High School
12701 West 67th Street
Shawnee Mission, KS 66217

The Sunset Hill School
400 West 51st Street
Kansas City, MO 64112

Ashland Eighth Grade Center
4610 East 24th Street
Kansas City, MO 64127

Grandview Senior High
2300 Highgrove Road
Grandview, MO 64030

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (8 hours to 4 days)
   Summer Institute (1 week, 7 hours/day)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Same materials used in the workshops; commercially available from EME Headquarters, Portland, OR.

K. MATERIALS EVALUATION:

1) Evaluator(s);
   Education Commission of the States; Brigham Young University (BYU) doctoral study; Northwest Regional Educational Laboratory
2) Pertinent published research on evaluation:
   Department of Energy (U.S.) published results of Education Commission of the States; doctoral dissertation by Edward A. Dalton, BYU.
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

We have conducted numerous workshops for teachers and are continuing to do so at the rate of two or three per month. Materials are provided to the schools which have teachers participating in the workshops. We also provide a bi-monthly newsletter to provide teachers with information on new resources and up coming events that may be of interest to energy educators. Since our material is interdisciplinary we include teachers from all areas in workshops. We are also developing a local resource guide which lists materials, speakers and films locally available to teachers.

M. PLANS FOR THE FUTURE:

To continue workshops.

N. REPORT SUBMITTED BY: Ron Converse
September 13, 1979

A. TITLE: TOPEKA OUTDOOR-ENVIRONMENTAL EDUCATION PROGRAM

B. DIRECTOR: C. L. "Tuffy" Kellogg
Topeka Public Schools
125 Southeast 27th
Topeka, KS 66605
913/233-0313, ext. 306

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education, urban environmental education.

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE:
90 acre outdoor education site

E. PRINCIPAL STAFF: 5

CONSULTANT SERVICES UTILIZED: Under ESEA Title III.

F. HISTORY:

1) Principal originators:
C. L. "Tuffy" Kellogg; Dr. Q. Groves
2) Date and place of initiation:
1966; Topeka, KS
3) Funding sources utilized:
Federal, local school district, local civic organizations, and local industry
4) Overall purpose:
To develop biotic and abiotic environmental awareness and problem solving abilities through a multidisciplinary approach.

G. OBJECTIVES:

(Objectives have been developed for each unit; see F-4 above for overall purpose.)

H. MATERIALS:

1) Materials produced:
Textbooks -- for grade level:
1-Plants; 2-Animals; 3-Cities; 4-Outdoor Adventure; 6-Walk with the Wind; 7-A Pond Adventure; 8-Tire Production and Pollution Control; 9-Geology of Lake Perry; 10-Environmental Geology; 10-Life--Past, Present, Future; 10-Life in a Forest; 11-Chemistry of Cellophane; 12-Electrical Production.

Other --
Special Education: Balance of Nature, Winter Environment, Air Pollution, Checking on the Weather, Insects and Spiders, Animals, Solid Wast Pollution, Water Pollution, Camping Skills, Enjoying the Environment; Energy and You, a Study of Trees, The Story of Steel.

2) Free materials available: None
3) Materials purchasable:
    Contact project headquarters
4) New instructional materials being developed:
    Revising textbooks Plants, Animals and Cities.
5) Materials anticipated for development:
    Stream Investigation.
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 26
    26 elementary; 13 secondary
2) Teachers adopting all of the materials: Not applicable
3) Teachers using some of the materials:
    250 elementary; 40 secondary; 30 special education
4) Total students using all of the materials: 10,000
5) Totals stated are definite.
6) Selected schools where the program materials are being used:

Jardine Middle School
2600 West 33rd
Topeka, KS 66611

Landon Middle School
731 Fairlawn
Topeka, KS 66606

Whitson Elementary
1725 Arnold
Topeka, KS 66604

McCarter Elementary
5512 West 16th
Topeka, KS 66604

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshop (varies in length)
    Graduate hour workshop (3-credit hour; in conjunction with Washburn University; 2½ weeks, 8 hour day in the summer.)

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

The program began with an outdoor experience of outdoor skills and nature study for sixth graders. When federal funding was procured, the program was expanded with written units and field trips for fourth level students and all secondary science students. As the program became part of the regular school system budget and curriculum, written units and field trips were revised for the already going studies and additional written units and trips were developed and implemented for elementary levels 1, 2, and 3.

In each case, the written curriculum has been developed by the Office of Environmental Education professional staff; it is taught by the classroom teacher. The field trip is planned and implemented by the staff. Both are evaluated by classroom teachers.

M. PLANS FOR THE FUTURE:

Constant revision of each unit of study and field trip, according to the needs of students and teachers. Possible expansion to kindergarten and fifth level elementary students and to secondary social studies students.

N. REPORT SUBMITTED BY: C. L. "Tuffy" Kellogg
Ocbober 2, 1979

Previous Directory References: 1972, 1973, 1975

ERIC Documents:

ED 093 593	Balance of Nature
ED 093 594	Environmental Fundamentals
ED 093 595	Insects and Spiders
ED 093 596	Knowing and Using Your Environment
ED 093 649	Energy
ED 097 209	Animals
ED 097 210	Environmental Activities
ED 097 211	Enjoying the Environment
ED 097 212	Electrical Production and Pollution Control
ED 097 213	Plants
ED 097 214	Geology and Our Environment
ED 097 215	Life--Past, Present and Future
ED 097 216	Nutrition and the Growing Population
ED 097 217	Water Pollution
ED 099 208	Tire Production and Pollution Control

ED 101 937	Energy and You
ED 101 938	Forests and Man
ED 101 939	The Winter Environment
ED 116 910	Camping Skills

A. TITLE: ENERGY ADVENTURE CENTER

B. DIRECTOR: Earl Griffith
Wichita Public Schools
2500 Hiram
Wichita, KS 67207
316/945-8335

C. DESCRIPTORS: Conservation education, energy education, environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 8

F. HISTORY:

1) Principal originators:
   Earl Griffith
2) Date and place of initiation:
   January, 1978
3) Funding sources utilized:
   ESEA Title VIc
4) Overall purpose:
   Energy education

G. OBJECTIVES: None indicated; send for abstract.

H. MATERIALS:

1) Materials produced:
   Too extensive to list.
2) Free materials available:
   Awareness Brochure and abstract
3) Materials purchasable: None
4) New instructional materials being produced:
   For grade levels K-9
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 80
2) Teachers adopting all of the materials: 80
3) Teachers using some of the materials: unknown
4) Total students using all of the materials: 2,500
5) Totals stated are estimated.

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
    Workshop (20 hours)
    Summer Institute (40 hours)
    Evening Classes (4 hours)

K. MATERIALS EVALUATION:

1) Evaluator:
    Dr. Bill Daley, Fort Hayes State College, Hayes, KS
2) Pertinent published research on evaluation:
    Forthcoming
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

Rather than materials, per se, we have developed a total process that involves training (40-60 hours) and a good deal of classroom support.

M. PLANS FOR THE FUTURE: None indicated

N. REPORT SUBMITTED BY: Earl Griffith
August 31, 1979

A. **TITLE:** BOONE COUNTY SCHOOLS ELEMENTARY SCHOOL CAMPING PROJECT

B. **DIRECTOR:**
Gene Cantrall
Boone County Schools
P.O. Box 37
Florence, KY 41042
606/283-1003

C. **DESCRIPTORS:** Environmental education, outdoor education

D. **HEADQUARTERS:** Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Camp facilities and activities during May and September

E. **PRINCIPAL STAFF:** 57

CONSULTANT SERVICES UTILIZED: Director of YMCA Camp Ernst and director of Boone County Extension Service have served as consultants in developing and implementing both camping and instructional phases of the project.

F. **HISTORY:**

1) Principal originators:
   Boone County Community Education Council
   Representatives from 4th and 5th grade classroom teachers.
2) Date and place of initiation:
   January, 1979; Florence, KY
3) Funding sources utilized:
   Boone County Board of Education; Walton-Verona Board of Education; local PTA's; participants; local community organizations.
4) Overall purpose:
   To provide opportunities for 4th and 5th grade students to use the outdoors as a classroom where they can study, develop personal skills, and learn the essentials of a responsible existence with their environment.

G. **OBJECTIVES:**

1) To provide "hands-on" experiences in understanding our environment which are not available in the classroom,
2) To help students understand the natural interrelationships that exist in our world.
3) To help students become aware of, and understand ecological problems.
4) To provide valuable experience for student social development.

5) To provide an interdisciplinary approach to learning.
6) To provide opportunities for new peer group leadership development.
7) To provide children and adults with opportunities to see each other in a different setting and perspective.

H. MATERIALS: All produced previously.

I. IMPLEMENTATION: Being developed.

J. TEACHER PREPARATION: None indicated

K. MATERIALS EVALUATION: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

This project was initiated during 1979 as a pilot to provide environmental and outdoor education to 4th and 5th grade students in the Boone County and Walton-Verona school systems. Using materials developed in other organizations, 600 grade 4 students were involved in a two-day, day-camp experience during May 1979. The facility used was the local YMCA Camp Ernst Fourth grade classroom teachers and high school science teachers provided instruction. In September, 1979, the students had become fifth graders and were involved in a two-day resident camp experience. The facility used was the North Central 4-H Camp in Carlisle, KY. The camp was designed to follow up activities presented at the day camp. Borrowed materials were again used; however, instruction was provided by resource persons from the University of Kentucky, Department of Human Resources, Forestry Service, Soil Conservation District, and science and art teachers from the participating school systems. Subject areas included forestry, soil study, water and stream study, nature art, entomology, litter control, nature study, and physical education. The project evaluation has been very positive. This has been a community project coordinated by the Boone County Community Education Council.

M. PLANS FOR THE FUTURE:

A sequential curriculum will be developed for environmental and outdoor education for grades four and five and possibly six. This planned curriculum will provide materials and activities for use during the camping experiences and in the classroom. The focal point of the project will be the camping experiences.

N. REPORT SUBMITTED BY: Gene Cantrall
September 26, 1979

A. TITLE: THREE-DAY CAMPING TRIP

B. DIRECTOR: Johanna C. Hounschell
1004 South First
Louisville, KY 40203
502/583-5359

C. DESCRIPTORS: Conservation education, environmental education, outdoor education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: Classroom teachers

F. HISTORY:

1) Principal originators:
   J. C. Hounschell; B. Schwartz
2) Date and place of initiation:
   Spring, 1972; Carrollton, KY
3) Funding sources utilized:
   Community donations; human relations funding
4) Overall purpose:
   Develop independence and living together in an outdoor environment.

G. OBJECTIVES: Same as F-4

H. MATERIALS:

1) Materials produced:
   Primary (K-6) -- Resident Environmental Education Handbook, Jefferson County Public Schools
   Other -- Slide show
2) Free materials available:
   Contact Jefferson County Public Schools for further information at Curriculum Office, 3023 Melbourne Avenue, Louisville, KY 40220
3) Materials purchasable:
   Same as H-2 above.
4) New instructional materials being developed: No
5) Materials anticipated for development: None indicated
6) Commercial associations: None

I. IMPLEMENTATION:

Materials are available to Jefferson County teachers on request. Specific numbers not available.

J. TEACHER PREPARATION: Informal

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The students of the school have been involved in this Camping Program for the last eight years. It is a racially balanced inner-city school and participants are from the second through fifth grades. Funding was secured by community donations and some assistance from a Human Relations grant. The program was run by classroom teachers and volunteers. Some teachers attended Project Learning Tree workshops and held an in-service for the staff prior to the trip. It has been an excellent experience and the highlight of the school year.

M. PLANS FOR THE FUTURE:

Day camp for grades K-1; develop on site environmental yard; "KAEER" Fair.

N. REPORT SUBMITTED BY: J. Hounschell, B. Schwartz, S.Thomas
September 18, 1979

A. TITLE: ENVIRONMENTAL STUDIES PROGRAM

B. DIRECTOR: Dr. Jerry F. Howell, Jr.
UPO 780
Morehead State University
Morehead, KY 40351
606/783-3328

C. DESCRIPTORS: Energy education, environmental education, natural resources.

ADDITIONAL DESCRIPTORS: Technical environmental studies.

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 3

F. HISTORY:

1) Principal originators:
   Dr. Jerry F. Howell
2) Date and place of initiation:
   January, 1972; Morehead, KY
3) Funding sources utilized:
   US Office of Environmental Education; Morehead State University; Kentucky Council on Higher Education; National Science Foundation
4) Overall purpose:
   To produce technical environmental studies students; to conduct environmental education workshops; and to promote environmental awareness regionally.

G. OBJECTIVES: Same as F-4, above

H. MATERIALS:

1) Materials produced:
   A Selected and Annotated Environmental Education Bibliography for Elementary, Secondary and Post-Secondary Schools; by Dr. Jerry F. Howell, Jr., and Ms. Jeanne Osborne.
2) Free materials available: None
3) Materials purchasable:
   Bibliography, $3.25; from Morehead State University.
4) New instructional materials being developed: None
5) Materials anticipated for development:
   Revision of the Bibliography
6) Commercial association: None

I. IMPLEMENTATION:

1) School using entire set of materials: 50
2) Teachers adopting all of the materials: unknown
3) Teachers using some of the materials: 300
4) Total students using all of the materials:
   Only a few directly
5) Totals stated are estimated.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (each semester and also during summer term)
   Summer Institute (1 weekend)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Packets of information and the above-listed bibliography

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The project began with soft money (Office of Environmental Education) to assess environmental awareness in Appalachian Kentucky, to distribute environmental information, to produce television programs, and to begin a formal program at Morehead state University. Now the project operates an academic program to produce environmental studies graduates, hold environmental education workshops, and distribute environmental education materials (including a weekly newspaper article series with 300 articles produced to date).

M. PLANS FOR THE FUTURE:

Beginning an environmental education course for pre-service teachers.

N. REPORT SUBMITTED BY: Jerry F. Howell, Jr.

November 10, 1979

Previous Directory References: 1973, 1975, 1976

ERIC Document:

ED 118 379 A Selected and Annotated Environmental Education Bibliography for Elementary, Secondary, and Post-Secondary Schools

A. TITLE: CENTER FOR ENVIRONMENTAL EDUCATION, MURRAY STATE UNIVERSITY

B. DIRECTOR: Terry Wilson
Center for Environmental Education
South Business Building
Murray State University
Murray, KY 42071
502/762-2747

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Resource center, environmental van

E. PRINCIPAL STAFF: 1 full-time, 3 quarter-time

CONSULTANT SERVICES UTILIZED: From the Department of Education, Tennessee Valley Authority, Department of Energy, and an advisory council made up of educators in the region.

F. HISTORY:

1) Principal originators:
   Shaw Blankenship and Dr. Don Hunter, both from Murray State University; John Paulk, Tennessee Valley Authority
2) Date and place of initiation:
   September 1976; Murray State University
3) Funding sources utilized:
   Funding for the Center has been obtained from Murray State University, the public school systems (West Kentucky Environmental Education Consortium) and the Tennessee Valley Authority.(TVA). The first two sources provide an annual assessment and account for the major portion; TVA's contribution was primarily "seed" monies to establish the program effort; continued contributions from TVA are negotiated contractually.
4) Overall purpose:
   To provide a key mechanism for the most efficient use of resources and the most productive provision of services among Murray State University, School districts in the West Kentucky Environmental Education Consortium (WKEEC), TVA, and other local, state, and federal agencies and organizations involved in environmental education.

G. OBJECTIVES:

The primary project objective is to establish a university-based Center for Environmental Education in the western Kentucky region. The major functions of the Center will be inservice training of teachers in environmental methods and techniques, preservice training of teachers in environmental education, development of environmental programs, and dissemination of information and research relating to environmental education.

H. MATERIALS:

1) Materials produced:
   Language Arts with an Environmental Twang (K-12) activity guide; Teacher's Guide to Energy Resources in Kentucky; Environmental Approaches to Prehistory/Archaeology (K-12) activity guide; Environmental Math (K-12) activity guide.
2) Free material available:
   Teacher's Guide to Energy Resources in Kentucky
3) Materials purchasable:
   Language Arts with an Environmental Twang, $2.00 each, from the Center.
4) New instructional materials being developed:
   Prehistory (K-12); Math (K-12)
5) Materials anticipated for development:
   Guide to Using Your School Site; Solar Energy Activities; Ideas for Implementing Preservice Environmental Education Programs
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 15
2) Teachers adopting all of the materials: 100
3) Teachers using some of the materials: 300
4) Total students using all of the materials: 10,000
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Concord Elementary School
Route 10
Paducah, KY 42001

Carlisle County Elementary
Route 3
Bardwell, KY 42023

East Calloway Elementary
Route 6
Murray, KY 42071

Cooper Elementary School
1350 6th Street
Paducah, KY 42001

J. TEACHER PREPARATION:

1) Consultative service available: Yes

2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1 to 2 days)
   Summer Institute (1 week)
   Evening Classes (3 hours per week)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The major functions of the Center for Environmental Education (the Center) are inservice and preservice training, program development and research.

Inservice: Inservice training of teachers is primarily the responsibility of the public school system. The Center assists the public school system by housing the main offices of the West Kentucky Environmental Education Consortium (WKEEC) and by providing consultant services, planning and implementation assistance for workshops, program development services to individual teachers, access to resource materials for environmental education, and assistance with identification, development, and utilization of significant environmental study sites within the region. One example of this coordination function of the Center is the mobile environmental van made available to teachers throughout the WKEEC area. A converted van furnished by TVA and driven and programmed by a TVA student-intern, is filled with environmental study aides, special free materials, and assorted educational tools designed to assist teachers with implementation of environmental education activities. The Center manages the scheduling of the van, provides the educational materials, supervises the student-intern, and promotes use of the van in the area. It also makes periodic evaluations of the effectiveness of the van program.

Preservice: As identified by Guidelines for Environmental Education: The Kentucky Plan, preservice teacher training in environmental education is the first priority given teacher training institutions in Kentucky through their respective colleges of education. In meeting this mandate, Murray State is developing and implementing a program requiring both classroom and field experiences in environmental education for all elementary and secondary education teacher candidates. The program includes the interdisciplinary process-oriented approaches to teaching that emphasize utilization of local resources as tools for instilling an environmental ethic. Also required is a one-weekend residential experience at TVA's Land Between the Lakes Environmental Education Center. Instruction activities for the weekends are provided by Murray State University and TVA staff members as well as by graduate intern students of environmental education.

To expose the non-education student to environmental education, environmental education techniques and environmental concepts are being included in a variety of program areas. Such programming necessitates some course modification and occasional adaptation of teaching style by the university faculty. Providing the mechanism for such alterations is a major challenge to the Center.

Program Development: As a major focal point for environmental education in the region, the Center coordinates the inputs and resources of various groups, agencies, and organizations to meet specific program needs of the region. Specific programs, such as energy conservation, land use planning, local and regional problems, and wilderness appreciation, and innovative curriculum systems, such as computer based resources, are generated and administered through the Center. Both formal and non-formal approaches are used. The Center also coordinates both Project Learning Tree and OBIS (Outdoor Biology Instructional Strategies) for the entire state of Kentucky. Workshops in both programs are conducted annually.

Murray State University offers the master's degree in education with an emphasis in environmental education. New degree programs (such as the master's degree in environmental education and the Ed.S. with an emphasis in environmental education) are currently under review by the College of Human Development and Learning. New courses are offered periodically to supplement the current environmental education course of study. Frequently these supplemental courses are taught or partially taught by professionals from outside the traditional university community -- TVA has contributed much assistance.

Research: As the leader in educational research in West Kentucky, Murray State University disseminates information and conducts research relating to environmental education. The Center serves as the liaison between the University and the groups and organizations needing specific research services.

M. PLANS FOR THE FUTURE:

Further development of programs, courses, and services to the region.

N. REPORT SUBMITTED BY: Terry L. Wilson
November 27, 1979

ERIC Documents:

ED 077 696	Murray State University--Teacher's Workshop in Environmental Education (1971)
ED 077 697	Murray State University--Teacher's Workshop in Environmental Education (June 1972)
ED 077 698	Murray State University--Teacher's Workshop in Environmental Education (August 1972)
ED 100 677	Murray State University--Teacher's Workshop in Environmental Education (1973)

A. TITLE: THE ENVIRONMENTAL EDUCATION PROGRAM OF THE PINE MOUNTAIN SETTLEMENT SCHOOL, INC.

B. DIRECTORS: The Rev. Alvin Boggs, Director
Pine Mountain School
Mary Rogers, Coordinator
Environmental Education Program
Pine Mountain, KY 40810
606/558-4361 (main office)
558-4481 (Environmental education office)

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE:
Trails (need a staff member to accompany visitors); Indian cave and collection of artifacts; pioneer cabin, Appalachian exhibits of photos, weaving and spinning, medicinal plants, geology and fossils of the eastern coalfields; limestone cave.

E. PRINCIPAL STAFF: 5

1 to 4 interns at times; the environmental staff's work is supported by the Settlement office staff, farm and maintenance and housekeeping staff.

CONSULTANT SERVICES UTILIZED: Visits to many centers, members from other centers have visited us, and shared ideas with us. Experts in various fields, both professional and non-professionals, have given advice and services.

F. HISTORY:

1) Principal originators:
   The staff of the Pine Mountain Settlement School. This school had been established in 1913, first as a private boarding school, with health and community work programs, then after 1949 as a cooperative grade school (private institution and public school system working together).
2) Date and place of initiation:
   Spring, 1972; Pine Mountain.
3) Funding sources utilized:
   Voluntary gifts from a wide circle of donors, a small endowment fund, occasional gifts or grants from corporate organizations or foundations to meet some special need.
4) Overall purpose:
   To help visitors come "to see and respect the visible creation which mirrors the glory and the perfection of the invisible God." (Thomas Merton)

To offer mountain students, young and old the opportunity to learn from the earth and to understand and appreciate better the rich heritage of our region and their role of responsible stewardship for its future.

To give students from other regions an interpretation of our culture and natural environment through first hand experiences. These experiences, which give deeper understanding of a person's own attitudes, also provide a frame of reference with which to compare other environments.

To present environmental education not as a single subject, but as an integral part of all subjects. We hope to help participants learn by involvement and discovery, rather than merely hearing and reading.

G. OBJECTIVES: Same as F-4, above

H. MATERIALS:

1) Materials produced:
   The Green Book -- An aid for teachers shy of undertaking environmental education. It has some information for the teacher, and a sample lesson plan for lessons in principal fields of environmental study. Most lessons, as given, would be for grades 4 though 7, but it is not intended to be a text to be followed, but a basis from which teachers develop their own lessons, appropriate to their geographical area, and special age group.
2) Free materials available: None
3) Materials purchasable:
   The Green Book - $1.00; a few mimeographed lesson plans are left
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

The nature of the project is such that the services are utilized by several schools in the area.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Not indicated
4) Kinds of preparation programs:
   Workshops (in the past)
   Visits from teachers before they bring their classes in order to discuss the schedule and to look over the facilities.

K. MATERIALS EVALUATION: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

We are not primarily concerned with production of educational materials but in-the-field practice of spreading environmental awareness among people from pre-school to adult.

In the early years (1972-74), we had teacher workshops sponsored by ESEA Title III. We are not able to carry on with these as the government program had subsidized the teachers who came, which we are not able to do.

The trend since 1977, as we became more widely known, has been toward more bookings from both public and private schools and colleges from outside our area. Since they often fix their dates a year ahead it has meant that local schools who tend to book only a few months ahead have been fewer in number recently which disturbs us. Our schedule is already fully booked till June, 1980, except for one or two winter weeks and a few weekends.

M. PLANS FOR THE FUTURE:

We hope to develop a solar energy greenhouse project if we can get funding.

We may also have a workshop on bee keeping for local people. Our former December college term on "Culture in the Appalachian Environment" is rescheduled for May for those colleges which have moved their inter-term from December to May.

Our priority is still to keep up with the pressing demands of the schedule we have and to keep it running effectively. There is at present not much margin of time or energy to expend on further projects, and we are short of funds.

N. REPORT SUBMITTED BY: Mary Rogers
September 17, 1979

Previous Directory Reference: 1973

A. TITLE: MAYWOODS OUTDOOR EDUCATION PROJECT

B. DIRECTORS: Ms. Johanna Strange
Dr. Stephen A. Henderson
Model Laboratory School
Eastern Kentucky University
Richmond, KY 40475
606/622-2986

C. DESCRIPTORS: Environmental education, outdoor education

ADDITIONAL DESCRIPTORS: Curriculum development for outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Environmental education activities designed for the Eastern Kentucky University Outdoor Education Center (Maywoods).

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED: Nancy Theiss, Kentucky Department of Education

F. HISTORY:

1) Principal originators:
   Dr. Steve Henderson; Ms. Johanna Strange
2) Date and place of initiation:
   April, 1976; Model Laboratory School
3) Funding sources utilized:
   School funds, parental support; the facility is owned by Eastern Kentucky University under the Department of Natural Areas.
4) Overall purpose:
   Develop an outdoor education program for Model Laboratory School to be utilized at the Eastern Kentucky University Environmental Lab at Maywoods. This would be utilized by surrounding schools using materials developed by Model's teaching staff. Also, as a training center for prospective teachers in Eastern Kentucky University's teacher education program.

G. OBJECTIVES:

1) Improve basic skills (reading, math, science, social studies, health, art) by providing experiences that allow for application in the total environment.
2) Motivate the students to develop personal and group responsibility toward their natural surroundings.

3) Increase the understanding of the environment, man's relationship to the environment and to participate in environmental problem-solving.
4) To help students to become aware of career possibilities in the realm of the environmental community.
5) To give students the opportunity to utilize process skills and formulate concepts from these skills.

H. MATERIALS:

1) Materials produced:
    Primary (K-6) -- Inquiry Interpretive Nature Walk Scavenger Hunt; Aquatic Investigation; Poetry in Nature; Stream Flow Determination; Astronomy.
2) Free materials available:
    Duplication of any of the above.
3) Materials purchasable: None indicated
4) New instructional materials being developed:
    For grade levels K-12
5) Materials anticipated for development:
    Further development of activities that will extend basic skills in all integrated subject areas on the elementary school level. These will be developed to be implemented primarily at our location.
6) Commercial associations: None

I. IMPLEMENTATION:

Eight teachers and 120 students are using the materials

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshop (8 hours; 24 hours)

K. MATERIALS EVALUATION: None

L. PROJECT SUMMARY:

April 27 to May 1, 1979 -- 24 hour experience for 120 third, fourth and fifth grade students. The children came in groups of thirty children each.

October 24, 1979 -- Eight hour inservice workshop for teachers in the utilization of Maywoods.

October 19 to 20, 1979 -- Display at the KAEER Fair at the Kentucky Association for Environmental Education in Bowling Green, Kentucky.

April 17, 1979 -- Inservice training for student teachers at the University of Kentucky.

M. PLANS FOR THE FUTURE:

1) Workshops and inservice training for local school districts in environmental education and utilization of Maywoods facility.
2) To develop a "model" environmental education plan at Maywoods for other schools to follow.
3) To extend the laboratory school experiences to a 3 to 5 day plan for 8, 9 and 10 year olds.
4) To develop and adapt activities for an elementary (students K-12) curricula plan for Maywoods.
5) To see participation in this experience with Model students an integrated part of the teacher education program for future teachers from Eastern Kentucky University.
6) To integrate a Maywoods Environmental Education experience into the program for each elementary education major at the university as part of the teacher education program.

N. REPORT SUBMITTED BY:

Johanna Strange
September 26, 1979

A. TITLE: ENVIRONMENTAL SCIENCE

B. COORDINATOR OF ENVIRONMENTAL STUDIES:

Jim Robbins
Bossier Parish Nature Study Center
Linton Road
Benton, LA 71006
318/965-0679

C. DESCRIPTORS: Conservation Education, energy education, environmental education, natural resources, outdoor education, population education.

ADDITIONAL DESCRIPTORS: Fresh water biology

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Laboratories and displays of local organisms (fish, snakes, lizards, plants, etc.)

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
Have consulted with: Soil Conservation Service, State Wildlife and Fisheries, State Foresters, Bureau of Outdoor Recreation, USDA County Agent, Office of Public Works, State Education Department, Local Education System.

F. HISTORY:

1) Principal originators:
   Jim Robbins, Gerald Pruitt, Gaius Hardaway, Cypress--Black Bayou Recreation and Water Conservation District (CBB)
2) Date and place of initiation:
   1969 on Cypress Reservoir in Bossier Parish.
3) Funding sources utilized:
   CBB, SCS, BOR, Louisiana Department of Education, Bossier Parish School District.
4) Overall purpose:
   To teach as many environmental interactions to as many students as possible.

G. OBJECTIVES:

Contained in study guides.

H. MATERIALS:

1) Materials produced:
   Fifth grade study guide including pretest and posttest.
   Seventh grade study guide including pretest and posttest.
   Live and preserved specimens of local organisms.
2) Free materials available:
   Schools requesting available plant or animal material may have it taken to them.
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   All grade levels including college.
5) Materials anticipated for development:
   Developing materials is a continuous procedure.
6) Commercial association: None

I. IMPLEMENTATION:

The entire local school system uses the material introduced through the Central Office and developed by teachers at the appropriate grade level. For instance all students in the local system at the fifth and seventh grade levels use the material. Other students come at times scheduled by their teachers.

Selected schools where the program materials are being used:

Princeton Junior High
Box 118
Princeton, LA 71067

Benton Elementary
Route 2, Box 10
Benton, LA 71006

Rusheon Junior High
2401 Old Minden Road
Bossier City, LA 71111

Apollo Elementary
2400 Viking Drive
Bossier City, LA 71111

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Teachers are worked with on an individual basis for as long as necessary.
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   The woods and lake.

K. MATERIALS EVALUATION:

1) Evaluator:
   Classroom teachers
2) Pertinent published research on evaluation: Not indicated
3) Unpublished research summary:
   These were oral communications

L. SUMMARY OF ACTIVITIES TO DATE:

We have been in full operation for one academic year. Our facility is open to the public or any school class of any age group including college. We are studying our environment as it exists in woodland and freshwater lakes from as many aspects as we are capable of. We are stressing the interrelationships that are present in the biotic and abiotic environment as well as learning what is present. Classes from our local school district have preference in attending the facility with some of them being scheduled from our Central Office.

M. PLANS FOR THE FUTURE:

A glass bottom boat trail.
Greenhouses for vegetation observation during inclement weather and propagation of plant endangered species.
Have art classes out for landscape painting.
Build an observation tower and pier for overlook views.

N. REPORT SUBMITTED BY:

Jim Robbins
Coordinator of Environmental Studies
September 5, 1979

ERIC Documents:

ED 182 113	A Learning/Teaching Experience in Ecology for Seventh Year Students at the Bossier Parish Nature Study Center
ED 182 114	A Learning/Teaching Experience in Ecology for Fifth Year Students at the Bossier Parish Nature Study Center

A. TITLE: MAINE STUDIES CURRICULUM PROJECT

B. DIRECTOR: Dean B. Bennett
Department of Educational and Cultural Services
Augusta, ME 04333
207/582-1332

C. DESCRIPTORS: Environmental education, natural resources

ADDITIONAL DESCRIPTORS: State studies, social studies, citizenship responsibility

D. HEADQUARTERS: Gardiner Regional Junior High School
RFD #5A
Gardiner, ME 04345
207/582-1332

E. PRINCIPAL STAFF: 4

CONSULTANT SERVICES UTILIZED: Reading consultant; elementary consultants; historians; anthropologists; economists; political scientists; archaeologists.

F. HISTORY:

1) Principal originators:
Maine Department of Educational and Cultural Services
2) Date and place of initiation:
Spring, 1976; Augusta, Maine
3) Funding sources utilized:
ESEA, TITLE IVc
4) Overall purpose:
To develop a K-12 social studies program on Maine's social life, economy, government, and environment from history; present and future perspectives are designed to develop reading skills in the content area.

G. OBJECTIVES:

1) To develop a K-12 curriculum with teaching guides, student textbooks, and instructional resources.
2) To develop a teacher education program on state studies.

H. MATERIALS:

1) Materials produced:
Seven K-6 unit teaching guides (one per grade level); Student textbooks for grades 3, 4, 5, and 6. Junior high school teaching guide for year long social studies course and textbook; teaching guide correlating Maine and US history; Maine Studies Sourcebook, grades K-12.

2) Free materials available: None indicated
3) Materials purchasable:
   Maine Studies Sourcebook, $9.95
   Guide Correlating Maine and US History, $3.50
   available from director of project's office.
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: Pending

I. IMPLEMENTATION:

1) Schools using entire set of materials: 50 school systems
2) Teachers adopting all of the materials: 150
3) Teachers using some of the materials: not indicated
4) Total students using all of the materials: 3,000
5) Totals stated are estimated.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshops (1 to 2 hours)
   Graduate courses (Teaching Maine Studies)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:

K. MATERIALS EVALUATION:

1) Evaluator:
   University of Maine at Orono; Maine Department of Educational and Cultural Services, Title IV office.
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE: None indicated

M. PLANS FOR THE FUTURE:

Awareness demonstration workshops

N. REPORT SUBMITTED BY: Dean B. Bennett
November 14, 1979

ERIC Document:

ED 119 956 Maine State Plan for Environmental Education

A. TITLE: MAINE CONSERVATION SCHOOL

B. DIRECTOR: Peter Dumont
Maine Conservation School
Education Building
Augusta, ME 04333
207/289-2512

C. DESCRIPTORS: Conservation education

D. HEADQUARTERS: Same as B

E. PROFESSIONAL STAFF: 5

F. HISTORY:

1) Principal originators:
   A foundation composed of a board of directors
2) Date and place of initiation:
   20 years ago
3) Funding sources utilized:
   Some state funds through the legislation but was designed to run on what it takes in.
4) Overall purpose:
   To promote conservation education in the State of Maine.

G. OBJECTIVES: None indicated

H. MATERIALS: None

I. IMPLEMENTATION: Not indicated

J. TEACHER PREPARATION:

1) Consultative service available: Not indicated
2) In-service education program: Not indicated
3) Pre-service training program: Not indicated
4) Kinds of preparation programs:
   Workshop (3 days)
   Summer Institute (2 week courses)

K. MATERIALS EVALUATION: Not indicated

L. SUMMARY OF ACTIVITIES TO DATE:

At the Maine Conservation Schoool, we opened with eight school groups attending a week resident conservation program held at our field campus, in Bryant Pond, Maine. After this period we have four weeks of college programs scheduled, which are followed by two weeks of residential programs. From this point we finish the year with ten more weeks of students for one week conservation programs. Also we hold a spring and a fall Project Learning Tree workshop which teachers attend.

M. PLANS FOR THE FUTURE: None indicated

N. REPORT SUBMITTED BY: Peter Dumont
September 2, 1979

A. TITLE: MARINE EDUCATION PROGRAM

B. DIRECTOR: Lorraine L. Stubbs
Marine Educator
Department of Marine Resources
State House Complex
Augusta, ME 04333
207/289-2291

C. DESCRIPTORS: Conservation education, environmental education, marine education, natural resources, outdoor education

D. HEADQUARTERS: Stevens School Complex
Hallowell, ME 04333
207/289-2291

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Aquarium at McKowan Point, E. Boothbay Harbor, Maine

E. PRINCIPAL STAFF: 2

F. HISTORY:

1) Principal originators:
   Department of Marine Resources personnel
2) Date and place of initiation:
   May, 1978; but similar project was in 1948-52
3) Funding sources utilized:
   State funds
4) Overall purpose:
   To help teachers learn more about our marine resources by providing workshops, courses, curriculum materials, field trips, audio/visuals and contacts with marine scientists and speakers.

G. OBJECTIVES:

1) To help the students of Maine gain a better understanding of our marine resources and heritage.
2) To better manage the marine organisms for their betterment while still maintaining a viable fisheries industry.
3) To encourage and help people better utilize the marine environment for recreation and vocation.

H. MATERIALS:

1) Materials produced:
   Primary and secondary (K-12) -- Slide series:
   a) Field trip to a rocky shore
   b) Marine Careers
   c) The life history and fishery of the Maine lobster
   d) The Atlantic herring
   e) The anadromous fish: Its restoration and management

Guides to these slide shows are available:
Other -- slide show "Why try and how to buy sea food" vocational and consumer education, foods and home economics. Film "Harvesters of the Sea" (obtain from Associated Sterling Films)

2) Free materials available:
The American Lobster; The Atlantic Herring; Bibliography of Food Fish; Fabulous Feasts; Harvesters of the Sea; The Aging of Fish; Paralytic Shellfish Poisoning
3) Materials purchasable: None indicated
4) New instructional materials being developed:
Multi-level; Earth Science Unit, text and slides; Energy Unit
5) Materials anticipated for development:
Field guide and traveling exhibit resource unit.
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 30
2) Teachers adopting all of the materials: 100
3) Teachers using some of the materials: 100
4) Total students using all of the materials: 1,500/year
5) Totals stated are estimated
6) Selected schools where the program materials are being used:

John Earle, Fisheries Instructor
Region 8 Vocational School
Rockland, Maine

Kathy Elkins, Teacher
Augusta Area Vocational School
Vocational Drive
Augusta, Maine

Mary Taylor School
Camden, Maine

Deering High School
386 Stevens Avenue
Portland, Maine

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
Workshop (varies 2 hour to 2 day)
Summer Institute (3 weeks)

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE: None given

M. PLANS FOR THE FUTURE:

Traveling research/resource trailer for use by the teachers after a workshop.

N. REPORT SUBMITTED BY: Lorraine L. Stubbs
September 5, 1979

A. TITLE: NATURAL HISTORY AND ENVIRONMENTAL EDUCATION

B. COORDINATOR: June LaCombe
Maine Audubon Society
Gilsland Farm
118 Old Route One
Falmouth, ME 04105
207/781-2330

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, outdoor education, population education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Scarboro Marsh Nature Center, Mast Landing Sanctuary, Gilsland Farm solar/wood heated headquarters.

E. PRINCIPAL STAFF: 12 (including summer staff)

CONSULTANT SERVICES UTILIZED: Project consultants to work on specific tasks

F. HISTORY:

1) Principal originators: Not applicable
2) Date and place of initiation: Not applicable
3) Funding sources utilized:
   Operating funds from Maine Audubon Society membership, program fees, and gifts.
4) Overall purpose:
   To inspire an active interest in the environment and provide a process for people to become more knowledgeable through courses, field trips, teacher workshops and nature center activities.

G. OBJECTIVES:

There are many "projects" within the Natural History Education Department; they include field trips, in-class presentations, teachers' workshops and a lending library of teachers materials.

H. MATERIALS:

1) Materials produced: None
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed:
   K-8 Nature Note series for Maine
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION: Not applicable

K. MATERIALS EVALUATION: Not applicable

L. SUMMARY OF ACITIVITIES TO DATE:

The Natural History/Environmental Education Department has in the past offered direct experiences for the public including programs for teachers and their classes. These include field trip experiences at nature centers and in-class programs. Teachers' workshops are given to promote existing resource materials available to teachers. This year we are beginning a curriculum development project. The project is focused on Maine natural history study. A series of brief note pages on natural communities and seasons containing background information, activities and resources. This project must be funded by a Maine business in order to be fully developed in 1980.

M. PLANS FOR THE FUTURE:

To carry out the above program.

N. REPORT SUBMITTED BY: June LaCombe
Natural History Education Coordinator
October 7, 1979

A. TITLE: ENERGY EDUCATION DEPARTMENT OF MAINE AUDUBON SOCIETY

B. DIRECTOR: Alan Lishness
Energy Department Director
Maine Audubon Society
118 Route One
Falmouth, Maine 04105
207/781-2330

C. DESCRIPTORS: Energy education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Slide shows, building tours, demonstration building -- wood/solar heating

E. PRINCIPAL STAFF: 6

CONSULTANT SERVICES UTILIZED: Researchers for publications, distributors of products

F. HISTORY:

1) Principal originators:
   Environmental Energy Education Project, 1976-77, Erika Morgan, Director; funded by US Department of Health, Education and Welfare
2) Date and place of initiation:
   July, 1976; Gilsland Farm at Maine Audubon Society
3) Funding sources utilized:
   Maine Office of Energy Resources; Department of Health, Education, Welfare; Department of Energy; National Science Foundation.
4) Overall purpose:
   Energy education, secondary level, elementary level; public interest; aid to determine energy policy; conserve energy in all areas.

G. OBJECTIVES:

Public and secondary level education concerning the conservation of energy resources and energy alternatives -- especially tailored for the consumer.

H. MATERIALS:

1) Materials produced:
   a. Primary (K-6) -- Energy Access
   b. Secondary (7-12) -- Maine Teachers Energy Primer; Region 10 Solar Greenhouse; Solar Concepts
   c. Other -- Retrofitting; Gilsland Farm Energy Systems, Vol. I, Vol. II; Final Report: Maine Firewood Study (technical report requirement for Department of Education).

2) Free materials available:
   Brochure listing all energy publications
3) Materials purchasable:
   Above mentioned publications
4) New instructional materials being developed:
   Elementary and secondary level materials
5) Materials anticipated for development:
   Vocational educators energy education publications.
6) Commercial associations: None

I. IMPLEMENTATION: Statewide

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
   (Teacher recertification course providing 3 credits)
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1 week)
   Summer Institute (1 week)
   Evening classes (8 weeks when offered)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Solar concepts, teachers' notes; Maine Teachers' Energy Primer

K. MATERIALS EVALUATION: Informal

L. SUMMARY OF ACTIVITIES TO DATE:

Project activities are best summarized by scanning the publications brochure. Most of the department's time has been spent researching, writing, testing, and marketing the publications; teacher recertification courses providing 3 college credits are held at various points in the state throughout the summer months and at least one energy evening course is offered in the winter months for interested persons. Staff persons participated in many workshops, fairs, policy determining conferences, media presentations, etc.

M. PLANS FOR THE FUTURE:

Energy conservation materials and activities (non-specific at this time).

N. REPORT SUBMITTED BY: Susan Panati
Project Assistant
September 24, 1979

Previous Directory Reference: 1976

ERIC Documents:

ED 147 108	Energy Considerations in Home Mortgages: An Evaluation Technique
ED 147 109	Retrofitting: The Thermal Upgrading of Buildings
ED 147 187	Vocational and Industrial Arts Packets
ED 147 188	Science Packets
ED 162 886	An Educator's Introduction to Energy Concepts: Overview Packets
ED 171 534	Solar Concepts: A Background Text
ED 171 535	Solar Concepts: Teacher Notes
SE 030 527	The Maine Teacher's Energy Primer

A. TITLE: GRASSROOTS EDUCATIONAL EXPEDITIONS

B. DIRECTORS: Christine and Karl Olson
Grassroots Educational Expeditions
Freedom, ME 04941
207/342-5422

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education, urban environmental education

ADDITIONAL DESCRIPTORS: Character education, leadership education agricultural education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 2

F. HISTORY:

1) Principal originators:
   Christine and Karl Olson
2) Date and place on initiation:
   1972; Freedom, Maine
3) Funding sources utilized:
   Tuition supports all programs
4) Overall purpose:
   See Objectives, below.

G. OBJECTIVES:

Grassroots Educational Expeditions accepts a group of ten students to participate in one of two projects. One is a working farmstead which implements environmental farming, teaches the practical skills needed to live on the land, and helps young people grasp some of the problems that agriculture is facing world-wide. The second is an annual expedition through rural Greece by horse drawn cart. This second requires the students to study the history of Greece, modern Greek language and pursue a project of their choosing for school credit. Both projects attempt to put young people in a position where they will have to use their wits, develop self-confidence and learn to make decisions as a group.

H. MATERIALS: Not applicable

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION: Not applicable

K. MATERIALS EVALUATION: Not applicable

L. SUMMARY OF ACTIVITIES TO DATE:

Beginning in the summer of 1973, we have lead an annual expedition through rural Greece by horse drawn cart. Beginning in 1977, it was shifted to the months of February through April so that participants could receive school credit.

Beginning in the summer of 1977, we began a summer session on our 150-acre farmstead for children 10 to 14 years old. Over the last three summers those groups of children have built a six-sided living shelter, made a rugged woods-kitchen, cleared an orchard site and fenced it, as well as grown their own food, learned to butcher pigs, and raised a good many animals.

A short (two-week) trip for adults through a particularly rugged part of rural Greece by horse drawn cart took place in 1979.

M. PLANS FOR THE FUTURE:

At the moment our most certain additional plan is an adults trip through Greece. This will be an annual venture several weeks in duration, having environmental awareness as one of its main objectives.

N. REPORT SUBMITTED BY: Karl and Christine Olson
September 1, 1979

A. TITLE: WOLF NECK WOODS STATE PARK INTERPRETIVE PROGRAM

B. DIRECTOR: Kate LeRoyer
Naturalist
Wolf Neck Woods State Park
Freeport, ME 04032
207/865-4465

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, outdoor education.

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Guided and self-guiding nature walks; interpretive panels along trails

E. PRINCIPAL STAFF: 1

F. HISTORY:

1) Principal originators:
   Mrs. L. M. C. Smith, park donor
2) Date and place on initiation:
   April, 1978; Freeport, Maine
3) Funding sources utilized:
   Private donation, Mrs. L. M. C. Smith
4) Overall purpose:
   To provide an education program for the park to educate its visitors so that they become environmentally aware.

G. OBJECTIVES:

1) To provide an education program for school age children, both in the park and the schools.
2) To provide education services for groups (i.e. Scouts, churches, senior citizens, etc.)
3) To add objectives as events dictate.

H. MATERIALS:

1) Materials produced:
   A slide program on seasonal changes in natural world, acceptable for all ages.
2) Free materials available:
   A Teacher's Guide to Wolf Neck Woods State Park
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   Materials for all levels
5) Materials anticipated for development:
   Slide programs, interpretive materials for park visitors.
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 31
2) Teachers adopting all of the materials: 60
3) Teachers using some of the materials: 70
4) Total students using all of the materials: 1,300
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Fischer-Mitchell Elementary School
597 High Street
Bath, ME 04530

Longfellow Elementary School
South Street
Brunswick, ME 04011

Cape Elizabeth Middle School
4 Scott Dyer Road
Cape Elizabeth, ME 04107

Rowe Elementary School
Main Street
Yarmouth, ME 04096

J. TEACHER PREPARATION: Informal consulting

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The education program being designed for Wolf Neck Woods State Park is twofold: During the summer, guided nature walks are offered for the public as well as for groups. Self-guiding interpretive trails are available. During the school year, the park naturalist offers a two-part program to schools and other groups: A slide show is taken to the schools to prepare for a visit to the park for guided walks. These programs are seasonal and teach about seasonal changes and adaptations. Other in-school programs are available upon request (i.e., junior naturalist training program).

M. PLANS FOR THE FUTURE:

It is hoped that facilities will be constructed at the park to provide permanent displays and presentation rooms. The program is not yet permanent. If these facilities are provided, the program will be expanded tremendously.

N. REPORT SUBMITTED BY: Kate LeRoyer
September 13, 1979

A. TITLE: NORTHERN NEW ENGLAND MARINE EDUCATION PROJECT

B. DIRECTOR: John W. Butzow
206 Shibles Hall
College of Education
University of Maine
Orono, ME 04469
207/581-7020

C. DESCRIPTORS: Environmental education, marine education, natural resources

ADDITIONAL DESCRIPTORS: Infusion curricula

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: See Summary, L, below

F. HISTORY:

1) Principal originators:
   John Butzow and Richard Schlenker
2) Date and place of initiation:
   Fall, 1975; University of Maine at Orono
3) Funding sources utilized:
   National Sea Grant and the University of Maine; teacher training assisted by summer institute in 1979 funded by National Science Foundation
4) Overall purpose:
   Marine literacy as defined in Harold Goodwin's "Introduction to Marine Education" (University of Delaware Sea Grant publication).

G. OBJECTIVES:

Develop a number of field-tested units of instruction of interest to teachers and students in grades K-12.

H. MATERIALS:

1) Materials produced: See Summary, L, below
2) Free materials available: None
3) Materials purchasable: See Summary, L, below
4) New instructional materials being developed:
   For grade levels 5 through 12
5) Materials anticipated for development:
   Indians in Coastal Environments unit; herring fisheries; pond and lake studies.
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 125
2) Teachers adopting all of the materials: 125
3) Teachers using some of the materials: unknown
4) Total students using all of the materials: unknown
5) Totals stated are estimated.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshops (varies in length)
    Summer Institute

K. MATERIALS EVALUATION: Informal

L. SUMMARY OF ACTIVITIES TO DATE:

Since its inception in August of 1977, the Northern New England Marine Education Project (NNMEP) has had as its major purpose the production of educational materials with marine foci for use by classroom teachers of Maine and New Hampshire. The latter months of 1977 and the 1978 calendar year saw the Project developing multi-disciplinary, infusion units for the elementary and junior high school. Twelve of those units have been trial taught by Maine and New Hampshire teachers and have been revised into an appropriate editorial form.

The emphasis of the NNMEP's work since January 1979 has been the development of infusion units for use in Marine education efforts in the secondary school. Classroom teachers from Maine and New Hampshire have helped us produce four units for the secondary school level.

The project conducted its third two-day marine education conference in November 1978 and just recently co-hosted a spring marine workshop in cooperation with Trigom's Gulf of Maine Aquarium and the State Department of Maine Resources. The project has received supplemental funding from National Science Foundation to assist in its 3-week summer workshop (July 16 to August 3) and its fall 1979 Conference. When concluded in December 1979 the project expects to have produced a total of 17 final units of instruction and to have introduced marine education into several hundred Northern New England schools.

The marine education units which were developed in this program are intended to be innovative and multi-disciplinary. The units are innovative in that they are designed to be used by classroom teachers as they are teaching within their standard disciplines and grade level objectives. That is, these units do not constitute a separate course of instruction, but are intended to provide marine topics for the study of standard school subjects. The following are brief descriptions of the units used in this study. Some of our units are available from ERIC in microfiche format. All units may be ordered from the project.

Clams and Other Critters (Butzow and Jones, 1978) was introduced for lower elementary school youngsters in kindergarten and grade 1. The unit suggests appropriate activities for that level. These activities are based on marine invertebrates and plants of the shore. Exercises in art include mural and bulletin board making, crayon resist techniques, prints of seashells and others. Tips on keeping very inexpensive aquaria are given, and language arts activities are suggested. These include poetry listening, dramatics, and writing experiences. Also included are math, home economics, and music activities, and a bibliography. (ERIC ED 164 349)

The Marine Art (Picker, 1978) unit, which was introduced for second grade use, stresses elementary school arts and crafts exercises. Each of the art activities described focuses on the marine, or the aquatic environment. Finger painting, sand painting, and watercolor painting are all recommended student exercises. Each of these exercises suggests the use of bits of seaweed, shells and other seashore findings to enhance the design. Further activities are described which involve the use of seashells, beach stones, driftwood, and shore vegetation in the creation of decidedly coastal works of art. Gyotaku, printing designs with a fresh fish is described. A bibliography is provided for teachers and students. (ERIC ED 164 351)

The Aquarium (Kilfoyle, 1978) was intended for use in grade 3, although with modifications, it should be useful for all elementary grades. This unit exemplifies the infusion concept. The teacher is first given instructions for the establishment of a simple, inexpensive freshwater aquarium. The students then perform grade-level language arts, math, music, art and science activities related to the aquarium. For example, spelling words are suggested which are parts and occupants of the aquarium. These spelling words are reinforced using simple crossword puzzles. The unit provides "story starters" to help the students begin fictitious stories pretending they are part of the aquarium environment. The art, science, math, and music exercises suggested by the unit make similar use of the aquarium. A comprehensive bibliography is provided. (ERIC ED 164 347)

The Beaver (DiSilvestro, 1978) was introduced for grade 4. This unit demonstrated the Northern New England Marine Education Project's adherence to Goodwin's (1977) definition of marine. By Goodwin's definition, marine education deals with both marine and aquatic environments. This unit presents the teacher with ample background information on the beaver, a slideshow with script, and a tape recording of a folksong about beavers adapted from Longfellow's Tales of Hiawatha. Various subject matter skills are practiced while considering the beaver and its habitat. Vocabulary, sentence structure, and parts of speech are practiced in the language arts section. Painting, modeling, drawing, and construction of hand puppets are suggested in the art section. Arithmetic word problems relating to beavers are provided. And, a catalogue of audio-visual aids and bibliography are furnished. (ERIC ED 164 348)

The Lobster (Eiseman, Dresser, Kilfoyle, and Picker, 1978) was introduced for use in grade 5. As with other upper elementary units, this unit provides a considerable amount of teacher background information. The habitat, life cycle, harvesting, and economics of the Maine lobster are discussed. Reading, writing, and vocabulary exercises are suggested which relate to lobsters and lobstering. New vocabulary is reinforced with crossword puzzles. Several art activities are presented, including the construction of a scale model lobster boat hull. The establishment of an aquarium for keeping crayfish is recommended. Crayfish morphology and behavior are similar in many ways to those of lobster. Activities and observations are described for use with the crayfish. Diagrams available for teacher duplication include lobster boat drawings, the lobstering process, the aquarium set-up, lobster internal and external anatomy. Mathematics problems are provided. A bibliography is provided. (ERIC ED 164 350)

Whales and Whaling (Carkin, 1978) was introduced for the 6th grade. This unit is written for infusion use just as the foregoing units were. The list of suggested activities in the unit are extremely lengthy, as are the catalogues of available resources. Exercises and activities are available for language arts, music, math, art, history and social studies, science, dance, and woodworking. Activities in this unit range from arithmetic comparisons of the speed of sound in air and water, to the scale drawing of a 92 foot Great Blue Whale on the school playground. Sea shanteys of the whaling era provide musical and historical exercises, and authentic arithmetic problems are provided in the form of whaler's pay and expense computations and shop's expense tabulations. (ERIC ED 164 354)

Our Heritage of Ships (Glueck, 1978) was introduced for use by the 7th grade. This unit provides background information on the history of watercraft featuring some of the more important types with descriptions and drawings. Arithmetic and science activities appear in the form of navigational exercises. Sundials and water barometers are described for student construction and use. Songs, poems, crossword puzzles, field trips, and written activities provide opportunities for students to use ships as a medium for studying social studies, art, music, and language arts. (ERIC ED 164 352)

Coastal Indians of Northern New England (Corcoran, DiSilvestro, and Picker, 1978) was introduced for 8th grade use. The Indians' unit provides a wealth of teacher background information on the tribes of the Abenaki kingdom. Crafts activities allow the students to make models of the tools and bark objects used by the Indians. Field trips for foraging and visiting dig sites and shell heaps are suggested, but many in-school activities are also recommended for those unable to travel. Teacher reproducible drawings show the Indians in common hunting, fishing and playing situations. Home economics activities involve the preparation of some Indian foods, most of which center around foraged plants. Science in the unit is an astronomy lesson including the mythology the Indians attached to the constellations. The Indian Unit is currently out of print; a new edition is currently being prepared.

Have You Ever Been to the Shore Before? (Hedlund, and Mauson, 1979) is a comprehensive study guide to the Maine and New Hampshire coastline. The unit, intended for grades 4-6 begins with suggestions for conducting coastal field trips. Teacher background materials describes the sandy shore, muddy shore and shingle beach and explains where plants and animals may be found. Numerous study suggestions and illustrations are provided for the most common marine plants and animals. Directions for establishing a marine aquarium are provided. Activity procedures deal with science language arts, mathematics and art areas of study. Museums, field study sites and a list of resource persons completes the unit. (ED 177 013)

Blue Mussel (Kilfoyle, 1979) was developed for grades 5-8 with possible upward extension into the high school level. The blue mussel (Mytilus edulus) is a deliciously edible mollusk of the Northern New England region which has not graced many North American tables. This unit was designed to present the mussel as a representative of its phylum in a scientific manner as well as to interest youngsters in the value of the organism as a food source. Activities in the language arts, social studies, science and mathematics areas provide a multi-disciplinary base for extending the unit. (ED 177 015)

Lighthouses (Dresser and Picker, 1979). This multi-disciplinary unit for middle school and junior high students was built around the biography of Abbi Burgess, an adolescent of the 1860's who lived on and helped operate the lighthouse with her parents at Matinicus Rock, Maine. In the unit, students read the book Abbie Burgess and listen to a taped interview with a more recent former keeper at "The Rock". Slides of the principal lighthouses of Maine are optionally available. Language arts-listening skills and log writing as well as social studies-science activites using navigators' charts are described. Mathematics puzzles and inventory exercises and a suggested field trip round out the unit.

Shipping, Ships and Waterways (Glueck, 1978) is a unit of instruction intended for junior high social studies. The procedures include both whole class and individual project approaches to learning about the modern shipping industry and the vessels they employ. The unit encourages learners to explore the variety of different vessel types seen in Northern New England waters: Passenger ships, ferryboats, cargo ships, oil tankers, coast guard vessels, and naval ships. Text and illustrative material ready for duplication is included which provides background on vessel types. Students are provided with references to places to write for further information. Activities are provided as excursions into science and language arts. Lists of locations where vessels may be seen in Maine are provided and a procedure for visiting a vessel is provided. An optional music activity based on the "Edmund Fitzgerald" rounds out the unit. (ED 164 353)

Wetlands (MacConnell and Dresser, 1979) is a unit for high school biology and general science students. The unit provides a planning guide for the conduct of field work in both fresh and salt water wetlands. Numerous suggestions involving plant and animal collecting and preservation are included. The unit emphasizes wetlands use as well as biology. Suggested field locations and a bibliography are included.

Seaweeds (Lancor, 1979) is a multi-disciplinary unit for various high school science courses. The unit presents teacher background and student activities in the following areas: history of the seaweed industry, economic and cultural importance, seaweed recipes, algae gum applications, algae applications, ecological aspects of marine algae. Procedures for field work, collecting as well as a key to seaweeds of the Maine Coast are contained in this unit.

Aquaculture (Pratt, 1979) is a upper secondary school science unit which provides comprehensive teacher background on the biology, economics and technology of raising oysters, mussels, lobsters and finfish in Maine waters. Specific lesson directions are provided on the history and development of mariculture industry for each major species as well as directions for preparation of the products as food. Appendices list commercial aquaculture companies, marine aquaria procedures, and other resources. (ED 177 012)

Navigation (Dresser, 1979) is a unit designed for mathematics or physics teachers and can be used by earth science or physical geography classes. In this unit a variety of problems solving procedures are exemplified including dead reckoning, determining latitude and longitude, bearing problems, current sailing situations and determination of latitude at Meridian passage of the sun. (ED 177 014)

Units in this series were produced in limited numbers. As long as copies last, units may be purchased by sending pre-paid orders to the director. Each unit ordered is $2.00 with a postage and handling fee of $1.50 for the first unit, $.50 per additional unit.

M. PLANS FOR THE FUTURE:

Continuation of unit development at University of Maine-Orono, and inservice activities

N. REPORT SUBMITTED BY: John W. Butzow
September 8, 1979

A. TITLE: MR. AND MRS. FISH MARINE EDUCATION PROGRAM
GULF OF MAINE AQUARIUM

B. CO-DIRECTORS: Jeff Sandler and Deb Hall
21 Vocational Drive
South Portland, ME 04106
207/799-1340

C. DESCRIPTORS: Marine education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE:
Floating aquarium barge in Portland Harbor.

E. PRINCIPAL STAFF: 2

F. HISTORY:

1) Principal originators:
   Deb Hall and Jeff Sandler
2) Date and place of initiation:
   September, 1978
3) Funding sources utilized:
   a. TRIGOM (The Research Institute of the Gulf of Maine)
   b. CETA
   c. Levey Foundation
   d. Lowery Foundation
4) Overall purpose:
   To provide a marine education resource for Southern Maine communities that will create awareness, knowledge, understanding and appreciation of the marine environment sufficient to motivate children to eventually participate in the environmental decision making process and develop positive personal relationships with the ocean and coastal zone.

G. OBJECTIVES:

1) To do marine programs (through classroom presentations, school assemblies, and barge visitations) for approximately 18,000 students this coming year.
2) To provide in-service teacher training workshops for the area teachers in marine education.
3) To offer seminars and training workshops for area college students.
4) To make available environmental field trips and open house programs for the general public.
5) To do a television special with the local CBS affiliate in marine education

6) To develop resource materials that can be made available to the area schools
7) To do programs for the two local hospitals as well as programs for special needs students who are institutionalized.

H. MATERIALS: In process

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION: Not applicable

K. MATERIALS EVALUATION: Not applicable

L. SUMMARY OF ACTIVITIES TO DATE:

We see thousands of students aboard our floating aquarium barge using creative dramatics with Mr. and Mrs. Fish as the primary teaching tool. Also, we give assemblies throughout the state and do special marine education projects with schools. We do programs for the handicapped, retarded, hospitalized, and elderly. We train area teachers in marine education through inservice workshops. We also provide seminars for college students in creative education as our program is an award winning approach to marine education. Mr. and Mrs. Fish are on television and in parades and on t-shirts and posters. We remind kids that the ocean is our friend.

Our "Rolling Lobster Revue" is a series of humorous skits that teach students of all ages about important marine concepts. Mr. and Mrs. Fish are costumed educators who tailor their material to meet the educational needs of each specific group.

We give slide shows and environmental tours, work on special programs for the gifted, host the general public in a series of open house programs and generally do all we can to promote greater knowledge and more positive feelings about the sea. Our creative dramatic approach is unique, creative and effective. Our pre-site, post-site testing has shown that students triple their previous knowledge as to the educational objectives set for them as a result of having participated in our project.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Jeff Sandler and Deb Hall
September 4, 1979

A. TITLE: CHEWONKI FOUNDATION ENVIRONMENTAL EDUCATION PROJECT

B. DIRECTOR: Harwood (Tim) Ellis, Jr.
Chewonki Foundation
RFD 3
Wiscasset, ME 04578
207/882-7323

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Programs promoting personal growth and and awareness of community

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: 400 acre peninsula, ropes courses, and challenge activities

E. PRINCIPAL STAFF: 5 to 8

CONSULTANT SERVICES UTILIZED: Occasionally, ie Project Adventure

F. HISTORY:

1) Principal originators:
   Tim Ellis, Dan Waggoner, Tim Harrigan, Ken Grant
2) Date and place of initiation:
   1972; a program with Rivers School, Weston, Massachusetts, centering on challenge
3) Funding sources utilized:
   Income from fund raising and tuitions
4) Overall purpose:
   To create programs which promote personal growth, community awareness, and sensitivity to the natural world.

G. OBJECTIVE:

To help schools and to help students through programs which promote personal growth, community awareness, and sensitivity to the natural world.

H. MATERIALS:

The Chewonki Foundation anticipates developing materials to help teachers plan for and follow up on Chewonki Foundation programs.

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION:

1) Consultative service available: Yes

2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    - Workshop (one week)
    - Summer Institute (one week)
    - Visits to schools for in-service training
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers;
    - Chewonki Residential Environmental Education programs; notes for teachers and parents

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Since the early 1970s the Chewonki Foundation has been operating programs from the start of school in the fall through mid-November and starting again in early April. Occasional winter camping, cross country skiing, winter ecology study trips have also been planned during the months of January and February. The Chewonki Foundation environmental education model is different than many other models in that we do not use winterized dormitory and dining room facilities. Students are broken into groups of 10 and live in encampment situations on our 400-acre coastal peninsula with a Chewonki leader and a teacher or parent volunteer in each encampment. We believe that our goals of character development and community awareness are more dramatically developed in this type of setting and we have no plans to winterize facilities. Such a model might be of value to other organizations as winterization is not required and objectives of values education can be more easily attained. Programs that we offer are both challenge programs and natural history programs.

M. PLANS FOR THE FUTURE:

We plan additional environmental education programs both on this site and other sites. We would like to expand our marine education programs with the utilization of boats that the Chewonki Foundation has built and uses extensively during the summer months. Such boats could be used for school environmental education programs in May and September. We are also planning to do more in school programming during the mid-winter months.

N. REPORT SUBMITTED BY: Tim Ellis
September 12, 1979

A. TITLE: CHESAPEAKE BAY FOUNDATION

B. DIRECTOR: A. W. Sherwood
162 Prince George Street
Anapolis, MD 21401
(301) 268-8816

C. DESCRIPTORS: Conservation education, environmental education, marine education, outdoor education

ADDITIONAL DESCRIPTORS: Public interest law, natural area conservancy

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 20

F. HISTORY:

1) Principal originators:
   A. W. Sherwood
2) Date and place of initiation:
   1965; Baltimore, MD
3) Funding sources utilized:
   Numerous sources have been utilized
4) Overall purpose:
   To contribute to an orderly management of the natural resources of the Chesapeake region

G. OBJECTIVES:

Estuary study; public interest law; natural area conservancy

H. MATERIALS:

1) Materials produced:
   Understanding the Chesapeake (1973)
   reports, papers, etc.
2) Free materials available: None indicated
3) Materials purchasable:
   Understanding the Cheaspeake, $3.50
4) New instructional materials being developed:
   For grade levels 9-12
5) Materials anticipated for development:
   Field study for estuarine ecology
6) Commercial associations:
   Tidewater Publishers

I. IMPLEMENTATION:

1) Schools using entire set of materials: 150

2) Teachers adopting all of the materials: 300
3) Teachers using some of the materials: not indicated
4) Total students using all of the materials: 8,000/year
5) Totals stated are estimated.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1 to 14 days)
   Summer Institute (1 to 14 days)

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Maryland State Department of Education
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

Our purpose is to contribute to an orderly management of the natural resources of the Chesapeake region.

Our three programs include:
- -- field instruction in estuarine ecology;
- -- legal and biological aid relating to the conservation and management of natural resources (public interest law); and,
- -- the acquisition, preservation, and management of natural areas.

We have been pursuing this purpose and operating these three programs since our founding in 1965.

M. PLANS FOR THE FUTURE: Yes

N. REPORT SUBMITTED BY: A. W. Sherwood
November 6, 1979

A. TITLE: CHESAPEAKE BAY ENVIRONMENTAL EDUCATION PROJECT (CBEEP)

B. DIRECTOR: Emmett L. Wright, PhD
Science Teaching Center
University of Maryland
College Park, MD 20742
301/454-4028

C. DESCRIPTORS: Conservation education, environmental education, marine education, natural resources

D. HEADQUARTERS: Room 0227
Science Teaching Center
University of Maryland
College Park, MD 20742
301/454-2024

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Resource library, map collection, production facilities

E. PRINCIPAL STAFF: 5

CONSULTANT SERVICES UTILIZED: Video-tape production consultant

F. HISTORY:

1) Principal originator:
   Emmett Wright, Bob Hamlin
2) Date and place of initiation:
   1978; University of Maryland
3) Funding sources utilized:
   US Office of Education, Office of Environmental Education; Sea Grant; University of Maryland
4) Overall purpose:
   For students to identify and analyze conflicting interests and issues concerning the Chesapeake Bay, and to determine their effects on the people and their environment.

G. OBJECTIVES:

1) To comprehend the Chesapeake Bay as a complex ecosystem.
2) To identify human interactions with the Chesapeake Bay and the effects (both good and bad) of these interactions.
3) To assume a given role and research the concerns relevant to the role.
4) To meet with interest groups to identify shared concerns.
5) Negotiate the selection of four out of twenty identified Bay issues for consideration.
6) Research and determine policy options for each selected issue.
7) Determine the impact of each policy option on the environment and people of the Bay area.

8) Prepare a plan for management of a specific aspect of the Bay.
9) Apply problem solving skills to local environmental problems.

H. MATERIALS:

1) Materials produced:
   College and secondary materials -- (available December 1979)
   Fact Sheet - Problems of the Chesapeake Bay
   Choices on the Chesapeake - 23 minute video-tape
   B.I.G. Simulation - Problem Solving and the Chesapeake Bay (student materials and teacher's guide)
   Data Bank - Chesapeake Bay
   Generalized Land Use Patterns of the Chesapeake Bay Region 20-20 (map)
2) Free materials available:
   Overview of the "Problem Solving and the Chesapeake" curriculum unit; overview of the "Land-use and Water Related Uses" modules concerning the Chesapeake Bay
3) Materials purchasable:
   Listed in H-1, above
4) New instructional materials being developed:
   For senior high school and college levels
5) Materials anticipated for development:
   Slide tape introduction to the Chesapeake Bay "Open Hearing" simulation (second simulation) for the "Problem Solving and the Chesapeake Bay" curriculum unit
6) Commercial association: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop

K. MATERIALS EVALUATION: Informal

L. SUMMARY OF ACTIVITIES TO DATE:

Development of two land use maps, the B.I.G. Simulation, Introductory video-tape, a teachers' guide, a fact sheet and a complete data bank. These materials were field tested during the Spring of 1979, revised during the summer/fall of 1979, and will be packaged for distribution by January, 1980.

M. PLANS FOR THE FUTURE:

Development of land-use and water-related uses modules concerning the Chesapeake Bay, funded by Sea Grant.

N. REPORT SUBMITTED BY: Emmett Wright
September 16, 1979

A. TITLE: TERRA: OUR WORLD

B. DIRECTOR: Dr. Michael F. Sullivan
State Department of Education
Division of Instructional Television
110 Painters Mill Road, Suite 20
Owings Mills, MD 21116
301/356-5600, ext. 291

C. DESCRIPTORS: Environmental education

ADDITIONAL DESCRIPTORS: Educational television

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Television production facility at Maryland Center for Public Broadcasting

E. PRINCIPAL STAFF: 5

CONSULTANT SERVICES UTILIZED: Dr. Minaruth Galey, Temple University Instructional Media

F. HISTORY:

1) Principal originators:
   Dr. James Latham; Mr. George Moore
2) Date and place of initiation:
   January 1, 1978; Owings Mills, Maryland
3) Funding sources utilized:
   Production assistance grant from Office of Environmental Education supplemented our production budget
4) Overall purpose:
   Design and produce an instructional television environmental education series for seventh and eighth grade students.

G. OBJECTIVES:

1) Produce an instructional television series that examines human impacts on the environment (science/technology, social, and aesthetic).
2) Develop nonbroadcast material for use with the series.
3) To provide environmental education curricular materials to local education agencies.
4) To teach pupils basic environmental concepts.
5) To increase awareness of environmental issues.
6) To assist pupils in making environmentally sound decisions concerning individual life styles.

H. MATERIALS:

1) Materials produced:
   Secondary (7-12) -- Broadcast materials, ten 20 minute instructional television lessons (a series); Nonbroadcast materials, teacher manual for the series.
2) Free materials available:
   Series will be open channel broadcast over the Maryland Public Broadcasting System. All 24 Local Education Agencies (LEA) in Maryland will have free use of the series. The manual is also free of charge to all 24 LEA's.
3) Materials purchasable:
   Ten 20 minute videotape lessons and teacher manual. We are considering preparing a facilitator training manual. We are currently examining various dissemination options.
4) New instructional materials being developed:
   The new project is designed for use with 7th and 8th grade students.
5) Materials anticipated for development:
   We are considering developing a facilitator training manual. This would be used in conjunction with workshops in the use of the series.
6) Commercial association: None

I. IMPLEMENTATION: Not applicable at this time

J. TEACHER PREPARATION:

1) Consultative service available: Yes, upon request
2) In-service education program: Yes, upon request
3) Pre-service training program: Yes, upon request
4) Kinds of preparation programs:
   Workshop (1 to 3 days), upon request
   Summer Institute (1 to 3 days), upon request
   Introductory and pre-viewing sessions (less than 1 day)

K. MATERIALS EVALUATION: None

(The series will be piloted; in-class evaluation, internal and external evaluation upon completion of project.)

L. SUMMARY OF ACTIVITIES TO DATE:

TERRA: OUR WORLD is an environmental education instructional television series designed for use with seventh and eighth grade students.

The series focuses on the economic, social, aesthetic, and scientific/technological impacts that current lifestyles have on the environment and other people. Ten tele-lessons are included in the series.

Ms. Connie Chung, CBS News anchorperson in Los Angeles, is the studio hostess. People on the street (youth and adult) are interviewed. Experts in the various issue areas provide pertinent information for the viewer.

The tele-lessons are:

Environment	Energy Alternatives
Places Where People Live	Food in the Environment
Renewable Resources	Food and People
Nonrenewable Resources	Quality of Life
Energy	The Future

The project is advancing as indicated below, with task listed first and completion date in parentheses.

Series design (January 1978); Grant proposal submitted (January 1978); Grant awarded (July 1978); Lesson treatments (February 1979); Experts identified (March, 1979); Shooting scripts (April 1979); On location taping (May/June 1979); Teacher manual (September 1979); Production scripts (December 1979); Studio segments (January 1980); Open channel broadcast (begins March 1980).

M. PLANS FOR THE FUTURE:

Early indications are that TERRA will be very worthwhile. The series and media use will be new to environmental educators. Therefore, we are seeking funding to assist in the dissemination of the series. A necessary part of the dissemination of TERRA should be the development of workshops and a facilitator training manual.

N. REPORT SUBMITTED BY: George W. Moore
Curriculum Design and Content Director
September 19, 1979

A. TITLE: ENVIRONMENTAL COURSES

B. DIRECTOR: William Gauld
Quabbin Regional High School
Barre, MA 01005
617/355-4651

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, outdoor education, population education, urban environmental education.

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Nursery, tree farm, Christmas tree plantations, black walnut plantation, trails, programs in operation

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICE UTILIZED: Indirectly since some of the course materials are based on materials developed by the US Department of Agriculture, Soil Conservation Service, University of Massachusetts Extension Service, etc.

F. HISTORY:

1) Principal originators:
Conservation program began when high school was built in 1967; curricula developed by two teachers.
2) Date and place of initiation:
Other courses, September 1971
3) Funding sources utilized:
NDEA Title III (1976)
4) Overall purpose:
To provide conservation, field biology and ecology background to students. To provide field experiences in the same areas. The major thrust is to heighten awareness of our environment and to encourage the development of an environmental ethic.

G. OBJECTIVES:

Behavorial objectives have been written for each course: The major objectives are to sharpen awareness of the environment to encourage the development of a student's environmental ethics, and to provide insight into skills necessary to environmental science careers.

H. MATERIALS:

1) Materials produced:
Secondary (9-12) -- behavorial objectives for all courses and a variety of guide sheets for laboratory and field exercises.

2) Free materials available:
   Materials have been written specifically for Quabbin Regional High School but could be modified for other use.
3) Materials purchasable: None
4) New instructional materials being developed:
   For grade levels 9 through 12
5) Materials anticipated for development:
   Continuing series of field and laboratory and lecture/discussion guidesheets
6) Commercial association: None

I. IMPLEMENTATION:

Implementation of materials is hard to judge; several teachers have visited Quabbin Regional High School and taken materials and ideas back to their schools. All students in the high school (930) are using the materials; outside the region, unknown.

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Planning an Environmental Science and Issues Conference April, 1980; workshops will be involved with issues addressed in our curricula.

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

Our curricula use classrooms, the outdoor area at the school (field, forest, stream, pond, etc.), field trips, after school activities to the fullest extent possible in order to achieve goals. I believe our uniqueness lies in the fact that we have a mandatory program for all students and the intensity and scope of our environmental science. Examples of the latter are our tree farm, nursery, intensive field studies (often of use to concerned natural resource agencies).

M. PLANS FOR THE FUTURE:

Workshop -- Environmental Science Conference, April 11, 1980

N. REPORT SUBMITTED BY: William Gauld

September 30, 1979

A. TITLE: QUALITY URBAN ENVIRONMENTAL STUDIES TRAINING (QUEST)

B. DIRECTOR: Maurice J. Donnelly
Brockton High School
470 Forest Avenue
Brockton, MA 02401
617/580-7609

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education, urban environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 4

CONSULTANT SERVICES UTILIZED: Boston College Center for Field Research and School Services; Massachusetts Audubon Society; Massachusetts Institute of Technology

F. HISTORY:

1) Principal originators:
   City of Brockton School System
2) Date and place of initiation:
   September , 1971; Brockton High School
3) Funding sources utilized:
   ESEA Title III, and the City of Brockton
4) Overall purpose:
   To establish an educational milieu so that students will have the opportunity to become ecologically informed and environmentally aware.

G. OBJECTIVES:

1) To establish an education milieu in which students will have the opportunity to become ecologically well informed and environmentally aware.
2) To develop an interdisciplinary team approach in the teaching of environmental studies at Brockton High School.
3) To develop a program in environmental studies in which students will utilize the Brockton community and its environmental features as laboratory for the study of ecological problems.
4) To establish an environmental resource center to provide faculty, students, and community members with information, materials, and programs relative to environmental concerns.
5) To establish an environmental studies program in which students will have the opportunity to actively participate with municipal agencies in solving local environmental problems.

H. MATERIALS:

1) Materials produced:
   Human Education (grade 1); Consumerism and the Decision Making Process (grades 4-6); Neighborhood Study (grades 4-6); Neighborhood Study (grades 7-12); Metric System (grades 1-4, 5-8); Environmental Awareness (grades 4-8); A Simple Study of Watersheds (grades 5-8); Ecological Economics (grades 5-8); The Moon (grades 7-9); Space Perception (grades 5-8). These are activity-oriented units. Also, Curriculum Manual for the Environmental Studies Program for Brockton High School was produced.
2) Free materials available:
   All of the above.
3) Materials purchasable: None
4) New instructional materials being developed:
   For grades 1-5, activity-oriented units for outdoor and classroom use.
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

More than 100,000 students, teachers, and community members have utilized the resources of the program during the past nine years. Due to the constraints of time and funding, no recent follow-up studies on the use of the materials for classroom use have been conducted. The materials have, however, been sent to approximately 100 schools requesting them.

J. TEACHER PREPARATION: None

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

The following is a partial list of the activities in which the students, with faculty advisors, have participated. The list will indicate the types of activities in which the students, faculty, and community have expressed interest and feel are needed:

Brockton High School Energy Savings Contest -- for the high school students only; dealt with suggestions on how to best save energy; prizes were ten speed bike and a wood stove, contributed by a local merchant.

Christmas Tree Ornament Recycling Contest -- for elementary schools. Students had to utilize used disposable househould items to create Christmas tree ornaments. Trees donated by local merchants. Field trip prize arranged for by the Brockton Conservation Commission. Trees were later used on a dune reclamation project in a neighboring community.

Christmas Tree Collection Project -- Students in cooperation with the National Guard, collected over 5000 used Christmas trees which were used in a dune reclamation project in a neighboring community.

Brockton Waterway Survey -- Members of the Brockton Conservation Commission and the city council requested students in the environmental studies program to conduct a survey of all the waterways in the city to determine the number of buildable lots on the waterways. This information was needed in order to establish a city ordinance concerning construction restrictions along waterways. The students produced a complete list containing the number of lots, owners, size of lots, location and plot number of each lot.

Soil Analysis Lab -- Each year the students establish a soils analysis lab for local gardeners. Approximately fifty community residents take advantage of this service each year.

Solar Models -- The students have constructed two model solar houses, a solar collector, and a solar cooker. These models are utilized by classroom teachers throughout the system, the County Extension Service, and one of the local utility companies for instruction in the concept of solar energy.

Tree Planting Project -- The students have planted hundreds of trees on school property and on city conservation land.

Energy Workshops -- The program has conducted 15 workshops on energy conservation and energy alternatives for the adult members of the Brockton community.

Massachusetts Association of Conservation Commissioners Convention:-- The program has served as the host of this convention for the past two years. Student and staff aid the association in any way possible.

All the programs' community/school activities are conducted after school hours on a volunteer basis. There is never a lack of volunteers or projects.

All of these activities and the program itself have the unique feature of being of direct benefit to the community and the school system. The benefits are both immediate and long-lasting.

M. PLANS FOR THE FUTURE:

Continuous updating of the environmental curriculum and additional community/school activities.

N. REPORT SUBMITTED BY: Maurice J. Donnelly
September 27, 1979

Previous Directory Reference: 1975

ERIC Documents:

ED 099 240 Project Q.U.E.S.T. An Environmental Studies Curriculum for High School

ED 099 297 Consumerism and the Decision Making Process

A. TITLE: NEW ENGLAND AND THE SEA

B. DIRECTOR: Charles W. Eastman, Jr.
Triton Regional School
Elm Street
Byfield, MA 01922
617/462-8171

C. DESCRIPTORS: Conservation education, environmental education, marine education, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE: 65 foot Sea Lab (May)

E. PRINCIPAL STAFF: 18

F. HISTORY:

1) Principal originators:
   Charles W. Eastman, Jr., director; Phil Whitbeck, chairman, social studies; Pike Messenger, chairman, science
2) Date and place of initiation:
   ESEA Title IVc grant written December 1976
3) Funding sources utilized:
   ESEA Title IVc, local businesses
4) Overall purpose:
   To educate students about the grave importance of the marine environment and to involve them in decision making processes relative to the future of marine resources

G. OBJECTIVES:

Environmental education; dropout prevention; teaching marine science by alternative means; teaching social studies by alternative means; marine education; career education

H. MATERIALS:

1) Materials produced:
   a. Primary
      Slides -- Architecture of Newburyport, Massachusetts; Great Clipper Ships; History of Fisheries; Day in the Life of Gill Net Crew; Day in the Life of Dragger Crew
   b. Seventh and eighth grade unit and worksheets
      Sandy Beach; Sea Lab; Dissection; Poetry of Sea; Maritime History; Tide Pool
   c. Other
      Loose leaf text on Maritime History and Fish Guides
      Units on course, "New England and the Sea"
2) Free materials available: None indicated
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   For grade levels 7 through 12
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 16
2) Teachers adopting all of the materials: Unknown
3) Teachers using some of the materials: 76
4) Total students using all of the materials: 1,100
5) Totals for 1, 2, and 3 are definite; for 4, it is estimated.
6) Selected schools where the program materials are being used:

Triton Regional Junior High School
Elm Street
Byfield, MA 01922

North Hampton Elementary
North Hampton, NH

Dover Junior High
Dover, NH

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (3 hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   All materials produced for adaption or adoption

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Massachusetts Department of Education
2) Pertinent published research on evaluation: None
3) Unpublished research summary:
   Report to the Massachusetts Department of Education and the report by them.

L. SUMMARY OF ACTIVITIES TO DATE:

1) Setting up 65 foot research vessel "Sea Lab"
   Includes echo sounding, radar, salinity meter, peterson grab, otter trawl, oxygen meter, cure borer; also commercial fisheries demonstration trip
2) Dory building course
3) Three day marsh hike
4) Field trips: Mystic Seaport, Tide Pool, Sandy Beach, New England Aquarium, Mystic Aquarium, Newburyport Marine Museum
5) Seventh and eighth grade units in oceanography, marine biology, maritime history and literature of the sea.
6) Maritime History course (half year) - Covers such areas as whales and whaling, navigation, maritime history, history of fishing, modern marine problems, boat building

M. PLANS FOR THE FUTURE: Same as above

N. REPORT SUBMITTED BY: Charles W. Eastman, Jr.

September 25, 1979

A. TITLE: DENNIS-YARMOUTH, FALMOUTH, HARWICH
NATIONAL ENVIRONMENTAL EDUCATION DEVELOPMENT COLLABORATIVE
(N.E.E.D.)

B. DIRECTOR: Richard F. Delaney
R.R. #1
Box #27
Eastham, MA 02642
617/255-6630

C. DESCRIPTORS: Conservation education, environmental education, marine education, outdoor education.

D. HEADQUARTERS: North Pamet Road
Truro, MA 02666
617/349-3726

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Everyday schedule

E. PRINCIPAL STAFF: 5

CONSULTANT SERVICES UTILIZED: None

F. HISTORY:

1) Principal originators:
   Martin Coyle, Falmouth, MA.
2) Date and place of initiation:
   1970, Falmouth
3) Funding sources utilized:
   Town school systems funding
4) Overall purpose:
   To increase the student's awareness and appreciation of the natural environment - specifically Cape Cod, MA.

G. OBJECTIVES:

Not indicated.

H. MATERIALS:

1) Materials produced:
   Grade 5: Seashore Book
   Parents' Guide Booklet
2) Free materials available: None

3) Materials purchasable:
   Seashore Book - Workbook/outdoor orientation book with some localized activities but generally applicable concepts - $2.25 from R. Delaney.
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 5
2) Teachers adopting all of the materials: 40
3) Teachers using some of the materials: Unknown
4) Total students using all of the materials: 1,000 per year
5) Totals stated are definite
6) Selected schools where the program materials are being used:

John Simpkins School
Yarmouth, MA

Morse Pond School
Falmouth, MA

Harwich Elementary
Harwich, MA

M. Small School
Dennis, MA

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (annually - weekend)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION:

1) Evaluator:
   In house.
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

See H. above

M. PLANS FOR THE FUTURE:

More energy education.

N. REPORT SUBMITTED BY: R. Delaney

August 19, 1979

A. TITLE: EXPERIENCES IN OUTDOOR EDUCATION

B. COORDINATOR: Anthony Boyer
Lanesborough Elementary School
Summer Street
Lanesborough, MA 01237
(413) 443-0027

C. DESCRIPTORS: Conservation Education, Energy Education, Environmental Education, Marine Education, Natural Resources, Outdoor Education

ADDITIONAL DESCRIPTORS: Wilderness Adventure (Survival Techniques)

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Nature trails behind the school

E. PRINCIPAL STAFF: 20 persons professionally involved.

CONSULTANT SERVICES UTILIZED: Generally, no. However, development of nature trails required the expertise of individuals from Pleasant Valley Sanctuary, Lennox, MA, and from Berkshire Community College, Pittsfield, MA.

F. HISTORY:

1) Principal originators:
   Aureola Sheldon, George St. Pierre, Neil R. Anderson
2) Date and place of initiation:
   1967; Lanesborough Elementary School
3) Funding sources utilized:
   CETA funds for nature trail setup. Students conduct magazine sale for funds for field trips. PTO funds.
4) Overall purpose:
   To better acquaint students with the "real" world; to complement and enrich the content areas of the school curriculum.

G. OBJECTIVES:

1) Reestablish the bond between man and his natural environment.
2) Reinforce abstract knowledge with concrete experiences.
3) Make a child sensitive to his surroundings.
4) Teach children how to use leisure time constructively.

H. MATERIALS:

1) Materials produced:
   Various nature trail guides, including teacher guides and winter guides. General outdoor education guide.

Field lesson guide of various "tried" lessons.
(All elementary school).

2) Free materials available: None listed.
3) Materials purchasable:
    Trail guides, lesson guide. Prices not available; write to business address.
4) New instructional materials being developed:
    None at this time.
5) Materials anticipated for development:
    If winter study develops, materials in that area will be developed to aid in this program.
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials:
    One -- Lanesborough Elementary School
2) Teachers adopting all of the materials: 5
3) Teachers using some of the materials: 20
4) Total students using all of the materials: 370
5) Totals stated are estimated.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs: None indicated
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Use of Hawley State Forest by various grade levels for day trips and overnight stays of two nights and three days:

- Grade 5 -- one night, two day trip in June.
- Grade 6 -- two night, three day trips in September and May. May trip is wilderness adventure and backpacking trip utilizing various survival techniques.
- Grade 6 -- five days, four nights in May to Cape Cod. Students camp out and visit various areas in Boston, Plymouth, and Cape Cod. Comparative study between Berkshire Hills of Western Massachusetts and marine environment of the Cape.
- Grade 5 -- fossil hunting trip to Helderberg region of New York State.
- Grade 4 -- trip to Sturbridge Village, Massachusetts; other trips to area museums such as Berkshire Museum, Pittsfield; Clark Art Institute, Williamstown; Albany Museum, Albany, New York; Trips to fire stations, post offices, supermarkets, farms, energy plants, etc.

Use by all grades of our nature trail behind the school. There are three separate trails with their own trail guides.

Extensive use of all land around the school.

Model rocketry firing in early spring for grade 6.

Many other activities and areas too numerous to expound upon.

M. PLANS FOR THE FUTURE:

Additional activities are planned related to winter study and adventure.

N. REPORT SUBMITTED BY: Anthony Boyer
Coordinator
September 27, 1979

Previous Directory Reference: 1973

A. TITLE: PROJECT GREENTHUMB

B. DIRECTOR: Douglas S. Fleming
Lunenburg High School
1079 Massachusetts Avenue
Lunenburg, MA 01462
617/582-9941

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education.

D. HEADQUARTERS: Same as B.

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Greenhouse, potting shed, storage buildings, landscaped quadrangle, cold frames, mini-bus, four wheel drive truck.

E. PRINCIPAL STAFF:
1 Project director/teacher (forestry), 2 instructional aides, 1 teacher (horticulture)

CONSULTANT SERVICES UTILIZED:
Evaluation consultant to provide statistical analysis of educational effectiveness (Dr. Alan Bernstein, Ph.D. Research Psychologist)

F. HISTORY:

1) Principal originators:
   Dr. Burton E. Goodrich Jr., Assistant Superintendent
   M. Donald Piermarini, Science Department Chairman
   Jean Killeen, Business Education Chairman
   Floyd Benitz, Director of Special Needs
2) Date and place of initiation:
   1976/Lunenburg High School
3) Funding sources utilized:
   E.S E.A. Title IV-C (Federal) 1977 - 1980
   Lunenburg Public Schools (Local)
4) Overall purpose:
   To develop an alternative education model using the career focus of horticulture and forestry to provide incentive to remain in school.

G. OBJECTIVES:

Learner Objectives

1. The student will develop the following skills related to horticulture:
    a. The student will be able to describe the proper maintenance of specific plants.
    b. The student will be able to identify common, commercially grown house plants.
    c. The student will be able to identify the working components of a greenhouse.
    d. The student will be able to describe horticultural ecosystems.
    e. The student will be able to identify plant parts.
    f. The student will be able to apply the principles of plant maintenance by growing plants from seeds and vegetative propagation.
2. The student will develop the following skills related to forestry and conservation:
    a. The student will be able to identify life forms native to a forest ecosystem.
    b. The student will be able to describe the forest ecosystem as the parts interrelate with one another.
    c. The student will develop psychomotor skills necessary to operate forestry management equipment.
    d. The student will be able to apply principles of forestry management at appropriate work sites.
3. The student will develop a more positive self-image.
4. The student will develop a more positive attitude toward school.

Program Objectives

1. The High School will offer a model alternative education program through Project Greenthumb.
2. The Project will demonstrate a model for personalized, experientially-based learning activities.
3. The Project will disseminate information about Project Greenthumb.
4. The Project will demonstrate that students can teach other students through the use of peer enablers (student leaders) selected from upper grade students.
5. The Project will provide service back to the community in the form of work for public agencies.

H. MATERIALS:

1) Materials produced:
    Secondary (7-12): "About the Greenthumb Growhouse" (guide), "Jenks Woods and Beyond: A Trail Map and Guide " (guide), "Journey to a Northern Bog" (laboratory exercise), "Project Greenthumb: A Curriculum (Content) Overview", "Outreach Botany", a laboratory curriculum for biology classes, "Axeing: The Right Questions", (guide to axemanship).
    Other: "September (October, November, December, etc.) in the Out-Of-Doors" (a guide to nature events month by month).
2) Free materials available:
    "About the Greenthumb Growhouse"
    "About the Greenthumb Project"

3) Materials purchasable:
   List not yet established.
4) New instructional materials being developed:
   Teacher workshops will develop some materials for use grades K-12.
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: Not applicable
2) Teachers adopting all of the materials: Not applicable
3) Teachers using some of the materials: 15
4) Total students using all of the materials: 35
5) Totals stated are definite
6) Selected schools where the program materials are being used:

All presently in Lunenburg Public Schools - no full-scale adoption at any school.

Lunenburg Junior High School
Lunenburg, MA

Lunenburg Turkey Hill Middle School
Lunenburg, MA

T.C. Passius Elementary School
Lunenburg, MA

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (7 two hour sessions)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION:

1) Evaluator: None
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary:
   "Third Party Evaluation of Project Greenthumb End of Second Year Report" by Alan L. Bernstein.

L. SUMMARY OF ACTIVITIES TO DATE:

See H. above.

M. PLANS FOR THE FUTURE:

1. To further develop and publish curriculum guide.
2. To further develop and publish instructional unit materials.
3. To develop Greenthumb teacher workshops.
4. To secure commercial firm or consultant to assure 1, 2, and 3.

N. REPORT SUBMITTED BY: Douglas S. Fleming
September 10, 1979

A. TITLE: PROJECT EPIC (EDUCATIONAL PROJECT TO IMPLEMENT CONSERVATION)

B. DIRECTOR: Donald R. Lambert
Westfield Public Schools
102 Elm Street
Westfield, MA 01085
413/568-9592 Ext 497/498

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, urban environmental education

ADDITIONAL DESCRIPTORS: Astronomy

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Resident Environmental Education Program Site;
Complete Environmental Science Library

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED: During 1967-1971, federally funded under ESEA Title III

F. HISTORY:

1) Principal originators:
   Donald R. Lambert
2) Date and place of initiation:
   September, 1967
3) Funding sources utilized:
   1967-1971, ESEA Title III; since 1970, funded totally by Westfield Public Schools
4) Overall purpose:
   To environmentalize existing curriculum

G. OBJECTIVES:

1) To help students understand the environment, their relationship to it and to prepare them for the environmental choices that they face now and as adults;
2) To give students the chance to use the things they have learned in school in the "real world" setting through direct experience.

H. MATERIALS:

1) Materials produced:
   Assorted handouts and materials to support teachers and students within existing curriculum.
2) Free materials available:
   EPIC Information Booklet

3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial associations: None

I. IMPLEMENTATION:

Implementation of the project has been system wide, involving 4,500 students.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Not indicated
4) Kinds of preparation programs:
   Workshop

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

250 field experiences annually with Project EPIC buses; bulk purchasing and packaging of elementary science materials; seventh year of week-long resident program for all fifth-grade classes; resource library with over 4000 volumes plus maps, equipment, etc.; summer environmental day-trip program, grades 3-6.

M. PLANS FOR THE FUTURE:

Continuation of present program

N. REPORT SUBMITTED BY: Bruce Schulze
Environmental Education Specialist
September 25, 1979

A. TITLE: GREENWOOD ENERGY AND ENVIRONMENTAL CENTER

B. DIRECTOR: Michael J. Van Gordon
7000 Kilgore
Avoca, MI 48006
313/324-2370

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources

D. HEADQUARTERS: Detroit Edison
2000 Second Avenue
Detroit, MI 48226
313/237-9210

SPECIAL FACILITITES OR ACTIVITIES FOR VISITORS TO SEE: Working with an existing building on our site and are developing trails to use.

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED: National Audubon Society was used as a consultant service when this project was originally planned.

F. HISTORY:

1) Principal originators:
Detroit Edison
2) Date and place of initiation:
Early 1970s; Detroit Edison
3) Funding sources utilized:
Corporate funding only
4) Overall purpose:
To relate the production of energy to man and how that production impacts the environment.

G. OBJECTIVES:

To develop the designation of an official Nature Sanctuary for Greenwood Energy and Environmental Center; to maintain, preserve and protect physical features within the environmental complex. To develop an intensive land use management plan for the site, designating wild areas, agricultural areas and electric production and transmission areas and how these areas can be used for wildlife and habitat management. To create awareness of energy and the environment and their interrelationship among service area residents; to use the Greenwood Energy and Environmental Center as a practical application for research projects presently proposed within Detroit Edison.

H. MATERIALS:

1) Materials produced: None to date
2) Free materials available:
   Some materials are available from the project office.
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   Activities guide for the Center, grade levels K-12
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION: None to date

J. TEACHER PREPARATION: None to date

K. MATERIALS EVALUATION: None to date

L. SUMMARY OF ACTIVITIES TO DATE:

We are presently working on displays, trails, material development, and teacher training using our site for programs on energy, natural resources and environmental and conservation education.

M. PLANS FOR THE FUTURE:

Pre and post activities for site programs; possible college level research; career exploration education working with intermediate schools in district.

N. REPORT SUBMITTED BY: Michael Van Gordon, Director
Debbie Williams, Naturalist
November 26, 1979

A. TITLE: BIRMINGHAM ENVIRONMENTAL CENTER

B. DIRECTOR: Virginia Finney
23400 West 13 Mile Road
Birmingham, MI 48010
313/644-9310

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, outdoor education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Open House once a month; trails and interpretive center

E. PRINCIPAL STAFF:

1 teacher consultant; 2 half-time aides, 80 volunteers; 1 parttime aide.

CONSULTANT SERVICES UTILIZED: U.S. Department of Agriculture; Robert Copeland; Byron Ashbough; Don Richards, Department of Natural Resources

F. HISTORY:

1) Principal originators:
One elementary principal and several interested citizens
2) Date and place of initiation:
1971
3) Funding sources utilized:
Gift funds from local clubs and service organizations; school district budget funds
4) Overall purpose:
Offer students K-12 specific activities best done in the outdoor classroom

G. OBJECTIVES:

For students to be aware of and understand the environment, problems and solutions;

For students to recognize and clarify their values concerning the environment;

For students to develop personal responsiblity for environment;

For students to develop motivation to work toward prevention and solutions of environmental problems.

For students to develop the attitude that man is an inseparable part of the natural system and can alter interrelationships.

H. MATERIALS:

1) Materials produced:
   Primary and secondary (K-12) -- texts, slide presentations, special classroom presentations
   Other -- instructional charts, interpretive displays
2) Free materials available:
   Brochure
3) Materials purchasable: None
4) New instructional materials being developed:
   Revision of elementary handbook; additional classroom presentations
5) Materials anticipated for development:
   Additional activities
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 21
2) Teachers adopting all of the materials: 182
3) Teachers using some of the materials: unknown
4) Total students using all of the materials: 4,818
5) Totals stated for 1 and 2, definite; estimated for 4, for 1978-79 school year.
6) Selected schools where the program materials are being used:

Beverly School
18305 Beverly Road
Birmingham, MI 48009

Bingham Farms
23400 West 13 Mile Road
Birmingham, MI 48010

Pembroke School
955 N. Eton
Troy, MI 48084

Westchester School
3003 West Maple
Birmingham, MI 48010

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (half day)

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Brian Campbell
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

Even with a drop in enrollment, we have substantial increases in teacher participation each year.

At this date, only the fourth grade level classes are compelled to attend. All other grade levels attend on a voluntary basis.

Teachers are instructed with the students -- they have no teaching duties on the field trip.

M. PLANS FOR THE FUTURE:

Varied activities.

N. REPORT SUBMITTED BY: Virginia Finney
September 27, 1979

A. TITLE: E. L. JOHNSON NATURE CENTER -- BLOOMFIELD HILLS SCHOOL

B. DIRECTOR: Don Hollums
3325 Franklin Road
Bloomfield Hills, MI 48013
313/335-0204

C. DESCRIPTORS: Energy education, environmental education, natural resources

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Exhibits, displays, special tours

E. PRINCIPAL STAFF: 1 fulltime, 7 parttime

CONSULTANT SERVICES UTILIZED: Personnel from Michigan State University

F. HISTORY:

1) Principal originators:
   Don Hollums; Dr. Charles Bowers, school board; Ed Wicherl, director of recreation, community education.
2) Date and place of initiation:
   September, 1969
3) Funding sources utilized:
   Local
4) Overall purpose:
   In May, 1970, when the Bloomfield Hills School District dedicated the E. L. Johnson Nature Center as a tribute to its retiring superintendent, the facility was described as "a special outdoor learning area set aside to develop and encourage outdoor/environmental/ecological education and activities for the students and community." That philosophy has not changed.

G. OBJECTIVES: None given

H. MATERIALS:

Too numerous to list.

I. IMPLEMENTATION:

1) Schools using entire set of materials: 14
2) Teachers adopting all of the materials: 130
3) Teachers using some of the materials: not indicated
4) Total students using all of the materials: 7,900
5) Totals stated are definite.

6) Selected schools where the program materials are being used:

Hickory Grove Elementary 2800 Lahser Road Bloomfield Hills, MI 48013	Andover High School 4200 Andover Road Bloomfield Hills, MI 48013
Fox Hills Elementary 1661 Hunters Ridge Bloomfield Hills, MI 48013	West Hills Junior High 2601 Lone Pine Road Bloomfield, MI 48013

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Not indicated
4) Kinds of preparation programs:
   Workshop (1 day to 1 week)

K. MATERIALS EVALUATION: Local, internal

L. SUMMARY OF ACTIVITIES TO DATE:

The Nature Center programs are an integral part of the total curriculum at all grade levels in the Bloomfield Hills school district. Elementary students in kindergarten through the fifth grade visit the center at least once during the school year. The specific program themes are:

Kindergarten -- "Seeing, Hearing, Tasting, Touching and Smelling Spring"
First Grade -- "How Animals Prepare for Winter"
Second Grade -- "Seeds and Plants"
Third Grade -- "The Sugar Bush"
Fourth Grade -- "Birdbanding"
Fifth Grade -- "General Ecology"

All district sixth-graders view special presentations in their own classrooms. The theme, such as "Mammals," varies from year to year. Depending on available time and budget, presentations are also made to the children in other elementary grade levels.

All seventh-graders participate in a special junior-high program related to forest interpretations.

At the senior-high level, students may elect to take the semester course titled "Natural Resources and Environmental Careers." The course is available to Andover students in the fall and to Lahser students in the spring. Course work emphasizes practical outdoor experiences and activities related to natural resource management. The class meets at the Nature Center for two hours each day and there are also several extended field trips during the semester. Students have the opportunity to help with the operation and maintenance of the center, to develop trails, and to conduct field trips for younger pupils.

Other senior-high courses which utilize the special natural features of the Nature Center include "Earth Science," "Environmental Science," "Biology," and "Man in Nature."

Curriculum materials are produced for distribution to both teachers and students. These help to enhance and extend the Nature Center programs fully into the curriculum. The Nature Center Newsletter is written and distributed to the staff several times during the school year. This aids in communication throughout the District regarding current programs and activities at the Nature Center.

The center is used primarily by district school groups during school hours. These groups are scheduled by the Nature Center manager and the individual school.

In addition, tours of the Nature Center and special presentations are available for organized groups upon request. Classes from other school districts are welcome on a fee basis.

A number of special activities are scheduled at the Nature Center throughout the year and are open to the public. These include family ecology walks, a fishing derby, birdbanding demonstrations, and wildflower classes. The schedule of additional nature/ecology programs and events varies from season to season.

M. PLANS FOR THE FUTURE:

Programs will continue to change

N. REPORT SUBMITTED BY: Don Hollums
October 1, 1979

Previous Directory Reference: 1972

A. TITLE: RECREATION AND OUTDOOR PROJECTS IN EDUCATION (ROPE)

B. DIRECTOR: Dr. Phillip T. Larsen
B-302 Ellsworth Hall
Western Michigan University
Kalamazoo, MI 49008
616/383-8129

C. DESCRIPTORS: Energy education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE:
One nature center and one outdoor education have trails, trail booklets and maps.

E. PRINCIPAL STAFF: 5

CONSULTANT SERVICE SERVICES UTILIZED: Local services

F. HISTORY:

1) Principal originators:
   Dr. Phillip T. Larsen
2) Date and place of initiation:
   May, 1977
3) Funding sources utilized:
   CETA (YCCIP Project); Department of Natural Resources WORC Project; private contract and Western Michigan University budget appropriations.
4) Overall purpose:
   To establish a network of outdoor education/nature centers in southwest Michigan for use by schools and local service groups.

G. OBJECTIVES:

1) To develop a network of outdoor education/nature centers in southwest Michigan;
2) To provide training for cadres of college students and teachers in outdoor education and environmental education; and,
3) To produce activities and teachers' guide for use at these centers.

H. MATERIALS:

1) Materials produced:
   Primary (K-6) -- preliminary version of 50 activity cards.
2) Free materials available:
   Brochures and outline summaries of the experiences, programs and facilities

3) Materials purchasable:
   Activity cards and teachers' guide to be availabe in 1981.
4) New instructional materials being developed:
   Activity cards in Outdoor Education
5) Materials anticipated for development: None
6) Commercial associations: None

I. IMPLEMENTATION: In research stages only.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (2 weeks for pre-service teachers)
   Evening classes (32 hours of instruction)
   Independent study programs for graduate students (48 hours)

K. MATERIALS EVALUATION: None to date

L. SUMMARY OF ACTIVITIES TO DATE:

During the 1977 calendar year the ROPE Project was initiated. Student teachers constructed outdoor education activities while developing the physical facilities for a nature center. These activities were then trial tested with more than 800 elementary school children during a five week field experience. Since that time, two other outdoor education centers were developed. Two to four nature trails have been constructed at each of the centers. Maps and trail booklets and activities were constructed for use at each of these centers. Teachers' guides and resource manuals are also being developed.

M. PLANS FOR THE FUTURE:

More extensive materials and guides are planned for both the regular and handicapped students. Physcial facilities are being altered in order that the handicapped students may participate in this project.

N. REPORT SUBMITTED BY: Dr. Phillip T. Larsen
September 26, 1979

A. TITLE: MT. PLEASANT ENVIRONMENTAL EDUCATION PROJECT

B. DIRECTOR: Catherine Weber
Mt. Pleasant Public Schools
201 South University
Mt. Pleasant, MI 48858
517/773-3500 or 5500

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education.

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: Central Michigan University - Drs. James Hayes, Gilbert Starks, William Browne, Robert Kohrman, and Alan Weber; Michigan State University - Dr. Martin Hetherington.

F. PROJECT HISTORY:

1) Principal originators:
Catherine Weber in cooperation with teachers and administrators in the Mt. Pleasant Elementary and Secondary Schools.
2) Date and place of initiation:
Early beginnings, 1969; the Kinney School, a Mt. Pleasant Elementary school. Funded project, September, 1978.
3) Funding sources utilized:
US Office of Environmental Education grant
4) Overall purpose:
The development of a K-12 interdisciplinary environmental education curriculum, based on the existing instructional program and resources, infused at all levels and in all disciplines.

G. OBJECTIVES:

1) To infuse environmental education into the existing curriculum using existing resources.
2) To develop a delivery system for the adapted goals and objectives for environmental education developed by the Governor's environmental task force and by the Michigan Environmental Education Referent Committee.
3) To develop elementary and secondary curriculum handbooks and to revise an existing elementary field studies handbook.

H. MATERIALS:

1) Materials produced:
Interdisciplinary, by grade level and subject areas (K-12) - Environmental Education Curriculum Handbook and Environmental Education Field Studies Handbook.

These materials are in final editing and printing process to be completed by January 1980 and implemented in spring, 1980. These are products of the environmental education grant.

2) Free materials available: None indicated
3) Materials purchasable:
The handbooks described above available for cost of printing and mailing.
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial associations: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 9
2) Teachers adopting all of the materials: Not indicated
3) Teachers using some of the materials: 100
4) Total students using all of the materials: Not indicated
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Kinney School
702 N. Kinney
Mt. Pleasant, MI 48858

Vawles School
South Watson Road
Mt. Pleasant, MI 48858

Ganiard School
North Adams
Mt. Pleasant, MI 48858

Mt. Guire School
South Isabella Road
Mt. Pleasant, MI 48858

J. TEACHER PREPARATION:

1) Consultative servive available: Yes, for field studies only
2) In-service education program: Yes, for field studies only
3) Pre-service training program: Yes, for field studies only
4) Kinds of preparation programs: Not indicated

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

A task-force of elementary and secondary teachers stipend by the grant-developed environmental education goals and concepts (state adapted goals) incorporating the key environmental education entities identified in the "Act." Cognitive and affective objectives were written for all disciplines and all grade levels (K-12), key processes are identified for learning activities identified within the existing curriculum and supported by existing print, audio-visual, human and community resources. Experience-based learning is emphasized. A revised handbook for K-6 environmental education field studies programs, now in its tenth year is being printed. Products are to be ready for spring implementation, 1980.

M. PLANS FOR THE FUTURE:

Through existing environmental education ad hoc curriculum committee implementation and evaluation will be an on going process.

N. REPORT SUBMITTED BY: Catherine Weber
September 28, 1979

A. TITLE: DINOSAUR HILL NATURE PRESERVE

B. DIRECTOR: Ginger Ketelsen, Administrative Director
1361 Axford Place
Rochester, MI 48063
313/651-1368

C. DESCRIPTORS: Environmental education, outdoor education

D. HEADQUARTERS: Axford Place and North Hill Circle
Rochester, MI 48063
(No phone at center)

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 20, mostly volunteers

CONSULTANT SERVICES UTILIZED: Yes

F. HISTORY:

1) Principal originators:
   Ginger Ketelsen; William Sinclair, Rochester City Manager
2) Date and place of initiation:
   1974
3) Funding sources utilized:
   Minimal funds from city and school system; two CETA projects 1978-1979; donations from PTA, service clubs and individuals
4) Overall purpose:
   Educational and recreational use of natural open land

G. OBJECTIVES:

To provide environmental educational and recreational experiences to citizens of the greater Rochester, Michigan, area.

H. MATERIALS:

1) Materials produced:
   Self guiding trail book; reference notebook for interpretive guides; Dinosaur Tales, bimonthly newsletter.
2) Free materials available:
   Dinosaur Tales sample copy; trail guide
3) Materials purchasable:
   Reference book, $5.00; Dinosaur Tales, 1 year subscription, $2.00
4) New instructional materials being developed:
   For grade levels preschool to adult.
5) Materials anticipated for development: None indicated
6) Commercial associations: None

I. IMPLEMENTATION:

There are four schools using the area for visiting and guided field experiences including North Hill Elementary, Woodward Elementary, St. John Lutheran and McGregor Elementary, all located in Rochester, MI.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No
3) Pre-service training program: Yes, informally
4) Kinds of preparation programs: Not applicable

K. MATERIALS EVALUATION: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

Dinosaur Hill Nature Center is a cooperative effort of Rochester Community Schools and the City of Rochester. Activities include:

Prepare and maintain site as a preserve; organize and train interpretive guide corp for visitors; publish a self-guiding trail pamphlet; establish specialized encounters (four senses walk,archaeology, SCIS-related, orienteering, Trail Tykes, Junior Naturalists, Be Your Own Naturalist, Mother Nature's Art Class); sponsor a Heritage Festival annually to emphasize local history of land and people; seek funds for site improvements, maintenance and staff and a future nature center.

M. PLANS FOR THE FUTURE:

Expansion of the above.

N. REPORT SUBMITTED BY: Ginger Ketelsen
September 30, 1979

A. TITLE: SAYRE SCHOOL EDUCATIONAL AND LAND USE PLAN

B. DIRECTOR: David J. Larwa
Sayre School
23000 Valecie
South Lyon, MI 48178
313/437-1761 or 1762

C. DESCRIPTORS: Environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: Soil Conservation Service, Oakland County; Environmental consultant, Southfield Schools

F. HISTORY:

1) Principal originators:
   David J. Larwa, staff members of Sayre School and parents
2) Date and place of initiation:
   September, 1974
3) Funding sources utilized:
   School and private local funds
4) Overall purpose:
   The basic purpose is to provide an area of undeveloped land which will serve the school as a living laboratory and make possible a more comprehensive outdoor program in nature and environmental education.

G. OBJECTIVES:

1) To hold in perpetuity some representative samples of the native landscape;
2) to motivate the student to actively participate in programs that aim to protect and use wisely the community and its natural resources.

H. MATERIALS:

1) Materials produced:
   Sayre School Education and Land Use Plan, guidebook
2) Free materials available:
   Related school site developments materials
3) Materials purchasable:
   Sayre School Educational and Land Use Plan, $4.00
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (2 hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Ideas for school site

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Provided ideas and techniques for teachers to use in order to receive the most benefit from the development and use of the school site. Provided ways to organize a school site development effort and shown pitfalls to avoid which can hamper school site development efforts.

M. PLANS FOR THE FUTURE:

To use the school site in the in-service of school groups and boards of education; to visit schools and aid them in tneir school site development efforts.

N. REPORT SUBMITTED BY: David J. Larwa
September 29, 1979

A. TITLE: VAN DYKE SCHOOLS ECOLOGY CLASSROOM: "NATURE TRAILS"

B. DIRECTOR: Dr. Joseph W. Riley
Lincoln Senior High School
22100 Federal Avenue
Warren, MI 48089
313/757-6600

C. DESCRIPTORS: Outdoor education, population education, urban environmental education

D. HEADQUARTERS: Lincoln Elementary School
8465 Studebaker
Warren, MI 48089
313/757-6600

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Trees, gardens, small shelter, several activity areas.

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: Dr. Donald Maxwell, assistant director of science, Health and Environmental Education, Oakland Schools, Pontiac, MI; Jerry Schmeiser, city planner of Warren, MI; Bill Collins, county youth agent (4H); Brand Hampikian, landscape architect, Project ROOTS, Lansing, MI, schools Title IVc Gardening Program.

F. HISTORY:

1) Principal originators:
   Committee of 22 parents, teachers and school administrators
2) Date and place of initiation:
   November, 1977; Lincoln Elementary School
3) Funding sources utilized:
   School district funds; community donations through "Adopt-a-Tree" program; Project ROOTS, Lansing schools Title IVc Gardening Program, provided funds for in-service training and teachers while working at the garden site.
4) Overall purpose:
   To provide a convenient, diversified outdoor classroom site in an urban setting.

G. OBJECTIVES:

1) To develop an ecosystem that enhances the beauty of the site and a diversity which will stimulate awareness and respect as well as an understanding of the environment.
2) To use student vegetable gardens as a vehicle to illustrate how life science concepts taught in the science classroom can have practical applications.
3) To provide diverse outdoor opportunities to enrich the curriculum by providing a variety of outdoor experiences for all ages.

4) To increase opportunities for community involvement and recreation.

H. MATERIALS:

1) Materials produced:
   The science concepts which are emphasized at each grade level are arranged to coincide with the Science Curriculum Improvement Study (SCIS) which is the elementary science curriculum that is used in our district. We have incorparated existing materials from several sources in the Outdoor Biological Instructional Strategies (OBIS) program.
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed:
   Instructional modules (K-8) to contain all necessary materials and instructions so that teachers and students can plan their site visit, come to the site, and pursue activities that are of relevance to them.
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 10
2) Teachers adopting all of the materials: 62
3) Teachers using some of the materials: 90
4) Total students using all of the materials: 1,550
5) Totals stated are definite.
6) Selected schools where the program materials are being used:

Lincoln Elementary School
8465 Studebaker
Warren, MI 48089

Thompson Elementary School
11370 Hupp
Warren, MI 48089

McKinley Elementary School
11333 Kaltz
Warren, MI 48089

Carlson Elementary School
12355 Mruk
Warren, MI 48089

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (half day)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The Van Dyke Ecology Classroom, Nature Trails, was initiated through the combined efforts and cooperation of Van Dyke students, teachers, parents and city officials. Schools near the site started the development of this open area into an outdoor study area that will supplement our science and other curriculum areas. The construction of wood-chip trails, a pavilion-type structure, student vegetable and flower gardens, 16 specimen tree plantings, and the use of the site as a study area by students from numerous classrooms have been the major emphases of the site during the 1978-79 school year.

The area is designed for maximum flexibility to meet the needs of all grade levels and a variety of curriculum areas. Our way to achieve maximum flexibility and teacher convenience is obtained by developing self-contained instructional modules which contain all the necessary equipment, instructional materials and teaching directions and suggestions to successfully complete each module on the site.

M. PLANS FOR THE FUTURE:

Permanent compass trail, boulder/fossil study area, expand school gardening program,weather station, develop student keys specific to the plants that are likely to be found at the site.

N. REPORT SUBMITTED BY: Dr. Joseph W. Riley
Science Consultant
November 18, 1979

A. TITLE: BALD EAGLE OUTDOOR LEARNING CENTER OF BEMIDJI STATE UNIVERSITY

B. DIRECTOR: Tom Yahraes
Bald Eagle Center
Cass Lake, MN 56633
218/665-2241

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Adventure education, experiential education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 15

CONSULTANT SERVICES UTILIZED: Consultants teach many courses.

F. HISTORY:

1) Principal originators:
   Bemidji State University
2) Date and place initiation:
   1970
3) Funding sources utilized:
   State of Minnesota
4) Overall purpose:
   To facilitate environmental/outdoor education to state university system and general public.

G. OBJECTIVES:

1) Facilitate environmental education for Bemidji State University.
2) Conduct environmental education; workshops and seminars for general public.
3) Public service -- regional, state and community meetings.

H. MATERIALS:

1) Materials produced:
   Our experiential approach does not lend itself to producing written materials; equipment lists, course outlines, catalogs and current brochure are some of the materials produced.
2) Free materials available:
   Catalog; current brochure
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   Orienteering trail map, for grades 7 and up

5) Materials anticipated for development:
   Interpretive guide for trail map
6) Commercial association:
   Regional newspaper for brochures

I. IMPLEMENTATION:

Bald Eagle is a diffusion center for environmental education materials produced by other agencies such as US Forest Service, US Fish and Wildlife Service, Project Learning Tree, etc.

J. TEACHER PREPARATION: Not applicable

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The Bald Eagle Outdoor Learning Center sits in the heart of the Chippewa National Forest, about 26 miles east of Bemidji and the University. The Center is a former Job Corps base and has living accommodations for several hundred persons. Surrounding the Center are thousands of acres of northern woods, lakes, and rivers where students participate in environmental workshops, recreation planning, camping, canoeing, hiking and more. The Bald Eagle acts as a base for the extended adventure programs into the Boundary Waters Canoe Area, the White Otter Wilderness and overseas programs.

M. PLANS FOR THE FUTURE:

Year round programs in Midwest and Canada plus overseas adventure programs.

N. REPORT SUBMITTED BY: Lee Buescher
Program Coordinator
August 30, 1979

A. TITLE: TEN DISTRICT ENVIRONMENTAL EDUCATION CONSORTIUM

B. DIRECTOR: O. W. "Pat" Ostrand
Hinckley High School
Hinckley, MN 55037
612/384-6277

C. DESCRIPTORS: Conservation education, environmental education, outdoor education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1 for first three years; 0 presently

CONSULTANT SERVICES UTILIZED: Department of Education; Department of Natural Resources; Minnesota Environmental Sciences Foundation, Inc.

F. HISTORY:

1) Principal originators:
   Ten schools in Pine and Chisago counties through the cooperation of the Department of Education, Department of Natural Resources, and the Minnesota Environmental Sciences Foundation.
2) Date and place of initiation:
   Fall, 1975
3) Funding sources utilized:
   Council of Quality of Education
4) Overall purpose:
   Propose the use of existing curriculum and physical resources while providing for a broad-based, multidisciplinary in-service option. The program will draw upon existing resource agencies and sites while maintaining local prerogatives for innovation. The program will use environmental education as a delivery system to develop subject matter skills currently being taught in discipline-specific courses.

G. OBJECTIVES:

1) To integrate environmental education into all subject areas K-12.
2) To increase teachers' awareness and experience in teaching environmental education.
3) To utilize the jointly purchased equipment and materials in all 10 districts.
4) To increase community awareness and involvement in environmental education.

H. MATERIALS:

1) Materials produced:
   Primary (K-6) -- Environmental education planning guide; Slide/tape presentation on environmental education and use of the planning guide.
   Secondary (7-12) -- Same as above for these grade levels.
2) Free materials available: None
3) Materials purchasable:
   Environmental Education Planning Guide, $9.50
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 10
2) Teachers adopting all of the materials: 445
3) Teachers using some of the materials: 250
4) Total students using all of the materials: 13,299
5) Totals stated are estimated:
6) Selected schools where the program materials are being used:

Chisago Lakes Public Schools
Lindstrom, MN 55045

North Branch Public Schools
North Branch, MN 55056

Pine City Public Schools
Pine City, MN 55063

Hinckley Public Schools
Hinckley, MN 55037

J. TEACHER PREPARATION:

1) Consultive service available: Yes
   Local environmental education coordinators present in each district.
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (one day)
5) Available pre-service and or in-service teaching materials for educators to use in preparing teachers:
   Environmental Education Planning Guide

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

1) Environmental Education Coordinators meetings four times per year.
2) Environmental education classes for college credit
3) Teacher workshops
4) Environmental education poster contests
5) Purchase of equipment and curriculum materials

M. PLANS FOR THE FUTURE:

Similar in nature to the activites listed above.

N. REPORT SUBMITTED BY: Don Grice
Local Environmental Education Coordinator
Hinckley Public Schools
September 17, 1979

A. TITLE: ENVIRONMENTAL LEARNING CENTER, INC.

B. DIRECTOR: John Pichotta
Box 191
Isabella, MN 55607
218/323-4345

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Large resident facility.

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED: Intern program and other special program people

F. HISTORY:

1) Principal originators:
   John Pichotta and many others
2) Date and Place of initiation:
   1972
3) Funding sources utilized:
   Began as ESEA Title III eight years ago; after three years incorporated and established a board of directors; presently self supporting through user fees charged to students
4) Overall purpose:
   Environmental education

G. OBJECTIVES:

Environmental education

H. MATERIALS:

1) Materials produced:
   Planning guide and curriculum selection which is provided to schools that use our facility; it is bulky and contains much information for everyone.
2) Free materials available:
   One page outline.
3) Materials purchasable:
   Planning guide, $14.00
4) New instructional materials being developed:
   Units to work well for grades six and up
5) Materials anticipated for development:
   More of the same
6) Commercial association: None

I. IMPLEMENTATION:

As a resident center, there are an estimated 85 schools using our program; approximately 100,000 students are involved to date.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs: None
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   The Planning Guide and Curriculum would work well for others.

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

We started as a Title III project housed in a former Job Corps Camp. We have been self supporting for five years. We will see student numbers reach 100,000 this coming year. School groups spend three to five days at our Center. About 85 to 90 schools use our Center and we have many weekend programs for the public. There are also special programs for special people (retarded, etc.). We gross about $350,000 a year and are working on plans to build a new facility at $5 million and expect to start that next spring.

M. PLANS FOR THE FUTURE:

Continuation of present program

N. REPORT SUBMITTED BY: Jack Pichotta
November 12, 1979

Previous Directory References: 1972, 1973, 1975, 1976

ERIC Documents:

ED 113 154 Activities: A Collection of Things To Do at the Environmental Learning Center

SE 030 506 Planning Guide and Curriculum

A. TITLE: HENNEPIN COUNTY PARK RESERVE DISTRICT, INTERPRETIVE PROGRAM AND CENTERS

B. DIRECTOR: Jack Mauritz
Box 296
Maple Plain, MN 55359
612/473-4693

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education, population education

ADDITIONAL DESCRIPTORS: Outdoor recreation

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Three nature centers, and other sites, within the Park Reserve District's 22,000 acres of open space lands.

E. PRINCIPAL STAFF: 11 fulltime

F. HISTORY:

1) Principal originators:
   Metropolitan Nature Centers, Inc. (Non-profit corporation)
2) Date and place of initiation:
   1978-79; Carver Park Reserve, Minneapolis, Minnesota
3) Funding sources utilized:
   Metropolitan Nature Centers (private foundation); Hennepin County Park Reserve District (annual tax levy support)
4) Overall purpose:
   Enrichment of experience for part reserve users.
   Increased environmental awareness in metropolitan Minneapolis St. Paul region.

G. OBJECTIVES:

1) To provide environmental education programs, supportive of classroom experiences, to approximately 50,000 school children annually;
2) to provide significant interpretive programs, in an outdoor recreation setting to approximately 75,000 persons from the general public annually;
3) to provide aid (through in-service and curricular materials) to classroom teachers relevant to outdoor education portions of environmental education program;
4) to increase awareness and encourage park reserve use among all citizens of the metropolitan Minneapolis/St. Paul area, including all ages and other groupings or classes.

H. MATERIALS:

1) Materials produced:
   Working with children in the out of doors, for teachers and group leaders of primary age children; and, a field trip guide for preschoolers. Over 25 field activity units and teachers' field trip packets.
2) Free materials available: None
3) Materials purchasable:
   "Working with Children. . ." 50¢
   "Field Trip Guide. . ." 50¢
   Available from Lowry Nature Center, Route 1 Box 690, Excelsior, MN 55331
4) New instructional materials being developed:
   Multiple materials as demand is identified
5) Materials anticipated for development:
   Field activity units
6) Commercial association: None

I. IMPLEMENTATION:

It is estimated that 2,000 teachers are using some of the materials with 50,000 students annually, in public school systems around the Minneapolis/St. Paul area (i.e. Bloomington, Edina, Osseo, MN)

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (length varies)
   Summer Institute (length varies)
   Evening Classes (length varies)
   Cooperative programming with several institutions is offered, including work with Mankato State University, Concordia College, St. Cloud State University, and the University of Minnesota.

K. MATERIALS EVALUATION: Informal

L. SUMMARY OF ACTIVITIES TO DATE:

Primarily, activities in environmental education have been designed to supplement classroom plans of students/teachers, specifically in the open space park setting. Programs are developed jointly by naturalist/teacher prior to visits; then implemented on site in the park setting. "Canned" programs are seldom delivered, nor are they intended. Rather, meaningful extension of the classroom experience is a desired end.

M. PLANS FOR THE FUTURE:

Future plans will be determined by requests from the school and community.

N. REPORT SUBMITTED BY: J. Mauritz
Assistant to the Superintendent
Hennepin County Park Reserve District
September 6, 1979

Previous Directory References: 1973, 1975, 1976

A. TITLE: MINNESOTA ENVIRONMENTAL SCIENCES FOUNDATION, INC.

B. DIRECTOR: Edward Hessler
5430 Glenwood
Minneapolis, MN 55108
612/544-8971

C. DESCRIPTORS: Energy education, environmental education, natural resources, outdoor education, population education, urban environmental education.

D. HEADQUARTERS: Same as B.

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED: None

F. HISTORY:

1) Principal originators:
MESFI had its beginnings under a Title III grant awarded to the Golden Valley (Minnesota) School District in 1967. We became a self-sufficient, non-profit agency in 1970.
2) Date and place of initiation:
1967
3) Funding sources utilized:
Federal, state, gifts, donations, contracts, service fees.
4) Overall purpose:
To help in the identification, clarification, agreement and commitment to knowledge, skill and attitude objectives that can serve as organizers for K-12 school and adult environmental education programs and to be continually involved in this as a renewing and renewal process. The ultimate goal is helping people practice decision making about environmental quality issues in the broadest sense of the term environment.

G. OBJECTIVES:

Not indicated.

H. MATERIALS:

1) Materials produced:
   Catalog available from MESFI.
2) Free materials available:
   Catalog.
3) Materials purchasable:
   Catalog available from MESFI.
4) New instructional materials being developed:
   K-12.
5) Materials anticipated for development:
   Agroecosystem materials, urban environmental education, future education, global education, energy materials, systems education, alternative technology.
6) Commercial association:
   National Wildlife Federation used materials as basis for Environmental Discovery Units and Jenny Publications, 57 Queen Avenue, Minneapolis, MN, published U.S. Fish and Wildlife Service materials we helped develop in a package titled: "We Can Help".

I. IMPLEMENTATION:

Our materials are distributed state and nation wide. We are not a district oriented project.

J. TEACHER PREPARATION:

1) Consultative service available: None
2) In-service education program: None
3) Pre-service training program: None
4) Kinds of preparation programs: None
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION:

1) Evaluator: None
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

MESFI is a small, non-profit environmental education organization and we do not fit the categories very well. We have been and will continue to be involved in K-12 curriculum development and environmental planning as well as a variety of environmental education consultative activities. We hope that we can continue our facilitative and leadership role while at the same time helping to strengthen a very diverse and exciting environmental education network in Minnesota. We hope that we can also continue to consider the adequacy of curriculum materials and programs in an effort to better help all of us deal with the problems human energy-resources-transformatives --the growing pressure on us, and on nature-- in both the short and long term.

M. PLANS FOR THE FUTURE:

Continued curriculum development in environmental education.
Workshops for teachers, especially in energy.
Issue oriented workshops for teachers and citizens.
Environmental planning.
Helping others plan programs.
Continuing to learn about and be informed by educational learning theory and ways that it can influence curriculum.
Expanding the ecosystem concept to include social-political-economic dimensions.
Children's uses of the environment.

N. REPORT SUBMITTED BY:

Ed Hessler
Director
October 2, 1979

Previous Directory Reference: 1972, 1973, 1975

ERIC Documents:

ED 078 214	Exemplary Vocational Education Program Based on Environmental Studies K-14. Interim Report.
ED 101 946	Community Environmental Study Program: Final Report
ED 103 233	Brine Shrimp and Their Habitat
ED 103 234	Change in a Small Ecosystem
ED 103 235	Color and Change
ED 103 236	Contour Mapping
ED 103 237	Differences in Living Things
ED 103 238	Fish and Water Temperature
ED 103 239	Genetic Variation
ED 103 240	Man's Habitat - The City
ED 103 241	Nature Hunt
ED 103 242	Nature's Part in Art

ED 103 243	Oaks, Acorns, Climate and Squirrels
ED 103 244	Outdoor Fun for Students
ED 103 245	Plant Puzzles
ED 103 246	Plants in the Classroom
ED 103 247	Sampling Button Populations
ED 103 248	Shadows
ED 103 249	Snow and Ice
ED 103 250	Soil
ED 103 251	Stream Profiles
ED 103 252	Tile Patterns and Graphs
ED 103 253	Transect Studies
SE 029 825	We Can Help. Environmental Education Teaching Resources

A. TITLE: ENVIRONMENTAL EDUCATION DISTRICT PROGRAM

B. COORDINATOR: Douglas O'Brien
Sunset Hill School
13005 County Road 15
Minneapolis, MN 55441
612/544-4148

C. DESCRIPTORS: Environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 15

Basic environmental education staff is 15, but other teachers participate in events.

CONSULTANT SERVICES UTILIZED: John Miller, Don Wagner, State Department of Environmental Education; Carmen Borgerding, regional environmental education coordinator

F. HISTORY:

1) Principal originators:
   State Department of Environmental Education
2) Date and place of initiation:
   1976
3) Funding sources utilized:
   1976-1977, state and school board funds; 1978-1979, school board funded only
4) Overall purpose:
   At first, curriculum awarenss and involvement; then, curriculum identification, implementation and evaluation.

G. OBJECTIVES:

1) Organize the district for environmental education purposes.
2) Assess where we are in environmental education.
3) Plan environmental education curriculum.
4) Implement environmental curriculum.
5) Evaluate the environmental education curriculum.

H. MATERIALS:

1) Materials produced:
   Primary (K-6) -- "WAYZATA WAY" a listing of environmental education activities done in our district combined with other resources available to us put together in a state-originated framework called "Some Essential Learner Outcomes in Environmental Education."

2) Free materials available:
   All materials are presently out of print.
3) Materials purchasable:
   None, until revision and reprinting.
4) New instructional materials being developed:
   None; key personnel lost last fall; no successors to date
5) Materials anticipated for development:
   "Wayzata Way" type document for junior high level, organized by subject areas and tied in with "Some Essential Learner Outcomes in Environmental Education."
6) Commercial associations: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 6
2) Teachers adopting all of the materials: unknown
3) Teachers using some of the materials: 50%
4) Total students using all of the materials: 75%
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:
   Since the materials were not properly in-serviced, teachers are probably not using them. The organization and rationale of the environmental education program was of greater importance than the materials.

J. TEACHER PREPARATION:

1) Consultative service available: Informally
2) In-service education program: Not at this time
3) Pre-service training program: No
4) Kinds of preparation programs: None indicated

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

We are in a temporary lull. Hopefully, we will be able to pick up on curriculum evaluation and writing for the junior high and then senior high level; then revise elementary curriculum. At the moment, we are doing lots of building environmental education activities which may be spin-offs of our efforts.

M. PLANS FOR THE FUTURE: See L, above.

N. REPORT SUBMITTED BY: Douglas O'Brien
November 6, 1979

A. TITLE: PRAIRIE WOODS ENVIRONMENTAL LEARNING CENTER (formerly: Interdisciplinary Testing of Learner Outcomes)

B. DIRECTOR: Gary Russell
New London-Spicer School District Number 345
Box 360
New London, MN 56273
612/354-2931

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education,

ADDITIONAL DESCRIPTORS: Freshwater ecology, prairie and woodland ecology, community environmental education, livestock and crop production, dairy and egg production

D. HEADQUARTERS: R and J Building
New London, MN 56273
612/354-2931

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Field experiences emphasizing above described areas relate lessons based on learner outcomes identified by subject matter from State Department of Education

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICE UTILIZED: Curriculum building process was directed by a consultant from the Minnesota Environmental Sciences Foundation, Inc. with input from State Department of Education consultants in communications, social studies and environmental education.

F. HISTORY:

1) Principal originators:
   Local curriculum assessment steering committee organized by State Department of Education environmental education consultant and implemented through a regional facilitator. Steering committee through facilitator enlisted help of Regional Environmental Education Council whose staff person wrote a grant proposal with help from Minnesota Environmental Sciences Foundation, Inc.
2) Date and place of initiation:
   1974-75 school year
3) Funding sources utilized:
   State Department of Education curriculum assessment and goal setting 1975 and 1976; ESEA Title IVc grant 1977-1980.

4) Overall purpose:

Develop lessons that relate to several subjects; base the lessons on field experiences that involve the use of several senses; build into these lessons measurable outcomes identified by State Department of Education curriculum specialists.

G. OBJECTIVES:

Test the learner outcomes built into our activities to see if the students involved have gained knowledge and values consistent with environmental viewpoint. In other words, we pre and post test to see if our selected learner outcomes are measurable in the students' level of environmental awareness.

H. MATERIALS:

1) Materials produced:

The project team has developed 120 separate activities; depending on the teacher's presentation, each of them is adaptable to classes from kindergarten to adult. For example, Native American Heritage can be a history lesson for adults or a story telling session for primary grades. All of the lessons are dependent on a field experience at one of our local prairies, woods, lakes, streams, fish management facilities or community sites. While many could be used on similiar sites elsewhere, they are best suited to a class visitation experience at our learning center.

2) Free materials available:

Brochure

3) Materials purchasable:

The lesson book of 120 activities is in its final stages of field testing; it will probably be released for its cost of printing in 1980, pending approval of funding agencies.

4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 3 pilot districts
2) Teachers adopting all of the materials: not applicable
3) Teachers using some of the materials: 50
4) Total students using all of the materials: 1,300
5) Totals stated are estimated
6) Selected schools where the program materials are being used:

Belgrade Public Schools
Belgrade, MN 56312

Eden Valley-Watkins Elementary
Eden Valley, MN 55329

Kimball Elementary
Kimball, MN 55353

Pleasantview Elementary
Sauk Rapids, MN 56379

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    - Workshop (half day)
    - Summer Institute (3 days)
    - Evening Classes (arranged by request)

K. MATERIALS EVALUATION:

1) Evaluator:
    Russell Schmidt, St. Cloud State College, St. Cloud, MN
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

August, 1977 - Curriculum writing teams begin writing lessons
September, 1977 to June, 1978 - Field testing and revising
August, 1978 - Writing teams add new lessons and supplementary materials
September, 1978 to June, 1979 - Field testing and complete revision
August, 1979 - Writing teams inservice educators who plan to use our field activities
September, 1979 to June, 1980 - Field testing and evaluation

M. PLANS FOR THE FUTURE:

As funding expires the newly formed corporation will assume direction of continuing operations. School and community organizations from this region, and eventually statewide, will be offered inservice training and visitation lessons relating our cultural and natural heritage.

N. REPORT SUBMITTED BY: Gary Russell

September 28, 1979

A. TITLE: LONG LAKE CONSERVATION CENTER (LLCC)

B. DIRECTOR: Robert L. Schwaderer
Long Lake Conservation Center
Palisade, MN 56469
218/768-4653

C. DESCRIPTORS: Conservation education, energy education environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 3

F. HISTORY:

1) Principal originators:
   The Aitkin County Parks Commission established the center in 1963 at the urging of its chairperson, James Marcum.
2) Date and place of initiation:
   1963
3) Funding sources utilized:
   Aitkin County donations 1964 to 1973 approximately $70,000; private sources donations approximately $100,000.
4) Overall purpose:
   To provide environmental/outdoor education to students of all ages in (primarily) Minnesota

G. OBJECTIVES: Same as F-4 above.

H. MATERIALS:

1) Materials produced:
   "The Possible Sack," a pre-trip planner for teachers planning to use the Long Lake center.
   "The Long and Short of It," a twice yearly newsletter
2) Free materials available:
   The newsletter
3) Materials purchasable:
   The trip planner, for $2.50 (handling and mailing)
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 60
2) Teachers adopting all of the materials: 70
3) Teachers using some of the materials: unknown
4) Total students using all of the materials: 4,000
5) Totals stated are estimated.

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (1 to 3 days)
   Summer Institute (3 to 5 days)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   We are the site used by Mankato State University and University of Minnesota in teacher workshops. Long Lake Conservation Center staff assist in program delivery.

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The environmental education project at Long Lake Conservation Center has witnessed two distinct phases: Phase I was the establishment and refining of the Conservation Leadership School, a summer program of study for junior high students. To date, some 3,000 students have attended. These students are Minnesotans (but in-state residency is not a requirement). Most of these students attending the summer school receive scholarships from various organizations and individuals interested in conservation.

The second phase, which has been completed, could properly be called the school program refinement phase. Through a series of evolutionary happenings since 1972, the attendance by schools has increased from one in 1972 to more than 60 in 1978-79. The centerpiece of this effort is The Possible Sack. We are currently operating at nearly 85% of capacity.

Phase III is now in the planning stage and will be a capital improvement one. The program is strong but the facilities are weak. It is our intent to correct the deficiency with the aid of a half million dollar building project. Beyond that, we envision simply maintaining the facility and further refining the program as needs dictate.

M. PLANS FOR THE FUTURE:

Adult programs advertised throughout the state.

N. REPORT SUBMITTED BY: Robert L. Schwaderer
September 21, 1979

Previous Directory References: 1972, 1973

A. TITLE: SLAYTON ENVIRONMENTAL EDUCATION PROJECT

B. DIRECTOR: Ken Hatch
Principal
West Elementary School
Slayton, MN 56172
507/836-6450

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education.

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Environmental sites in their beginning stages

E. PRINCIPAL STAFF: 20 (all classroom teacher in elementary school)

CONSULTANT SERVICE UTILIZED: Bob Hofflander, site developer; Projects Instruction-Curriculum-Environment (ICE) and ECOS, and the Department of Natural Resources

F. HISTORY:

1) Principal originators:
   All staff members
2) Date and place of initiation: Not indicated
3) Funding sources utilized:
   Minnesota state funds of about $2,000 over 3 years, plus local funds
4) Overall purpose:
   To get kids involved in looking at their environment

G. OBJECTIVE:

To get staff and students involved in seeing how each is involved in their environment and how changes in the environment are affected by society.

H. MATERIALS:

Units have been developed for the primary grades.

I. IMPLEMENTATION:

This new program is being used by 20 teachers with 540 students.

J. TEACHER PREPARATION: None

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

We have developed our site and materials for use in our school. At this time, we have no plans for expanding it to other schools. There are many excellent environmental education programs already available from which others may draw information.

M. PLANS FOR THE FUTURE:

Expansion of our site and continued update of our units.

N. REPORT SUBMITTED BY: Ken Hatch
November 5, 1979

A. TITLE: CONSERVATION WORKSHOP

B. DIRECTOR: Dr. William J. Calcote
Department of Biological Sciences
Box 3262
Delta State University
Cleveland, MS 38733
601/843-5521

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 15 to 16

F. HISTORY: None given

G. OBJECTIVES:

To provide for elementary and secondary teachers the opportunity to study concepts and understandings relative to conservation and environmental education.

H. MATERIALS: None

I. IMPLEMENTATION: None

J. TEACHER PREPARATION:

The program consists of a two-week workshop for teacher preparation.

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The workshop draws heavily on state and federal agencies for speakers from such agencies as Soil Conservation Service, Foresty Service, or health agencies for example. Activities center around field trips and lecture sessions designed by the speakers.

N. PLANS FOR THE FUTURE:

A two week summer workshop

M. REPORT SUBMITTED BY: Dr. William Calcote
September 5, 1979

A. TITLE: MAN AND THE GULF OF MEXICO (MGM) PROJECT

B. DIRECTOR: Dr. Bobby N. Irby
Science Education
University of Southern Mississippi
Southern Station - Box 5087
Hattiesburg, MS 39401
601/266-7148 or 7162

C. DESCRIPTORS: Environmental education, marine education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 5

CONSULTANT SERVICES UTILIZED: Mississippi/Alabama Sea Grant Consortium; marine educators

F. HISTORY:

1) Principal originators:
   Drs. Bobby N. Irby, Lloyd E. Story, Marlene M. Milkent
2) Date and place of initiation:
   1977; Mississippi
3) Funding sources utilized:
   Mississippi/Alabama Sea Grant Consortium
4) Overall purpose:
   Develop and implement marine curricula for K-12 in Mississippi and Alabama

G. OBJECTIVSS:

Develop, field test, revise and disseminate "Man and the Gulf of Mexico (MGM)."

H. MATERIALS:

1) Materials produced:
   10-12 Man and the Gulf of Mexico curricular
2) Free materials available: None
3) Materials purchasable:
   Guide to the Marine Resources of Mississippi, available from Southern Station Box 5087, Hattiesburg, MS 39401. Printed by Fox Printing Co., 1977, 352 pages hardcover, price $12.90 plus postage.
4) New instructional materials being developed:
   For grade levels 10 to 12
5) Materials anticipated for development:
   For grade levels K-9
6) Commercial association:
   Fox Printing Company, Hattiesburg, MS 39401

I. MATERIALS IMPLEMENTATION:

(Guide to Marine Resources of Mississippi, adopted as a state textbook. Implementation refers to use of Guide.)

1) Schools using entire set of materials: 20
2) Teachers adopting all of the materials: 30
3) Teachers using some of the materials: Not indicated
4) Total students using all of the materials: Not indicated
5) Totals stated are definite.
6) Selected schools where the program materials are being used:

Gulfport Separate School District
2005 15th Street
Gulfport, MS 39501

Biloxi Separate School District
216 St. Peter Avenue, P.O. Box 168
Biloxi, MS 39530

Picayune Separate School District
706 Goodyear Blvd.
Picayune, MS 39466

Harrison County School District
24th and 13th, P.O. Box 132
Gulfport, MS 39501

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (44 contact hours)
   Evening classes (1 night per week, 12 weeks; 3 semester credit hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Materials will be available in 1980.

K. MATERIALS EVALUATION:

1) Evaluator: Not indicated
2) Pertinent published research on evaluation:
   Preliminary evaluation has been completed; final evaluation will be available in 1980; publication pending "Sea Grants '70s."

L. SUMMARY OF ACTIVITIES TO DATE:

"Man and the Gulf of Mexico" is a marine education project sponsored by the Mississippi/Alabama Sea Grant Consortium. The broad objectives of the project relate to curriculum development, teacher education and curriculum implementation, grades K-12, as a means of establishing viable marine education programs in Alabama and Mississippi. As an initial step in attaining these objectives, a survey of Mississippi and Alabama science teachers was conducted in the spring of 1979. The results of the survey have implications not only for the MGM project staff, but also for anyone engaging in marine education activities.

The first phase of the curriculum, grades 10-12, will be completed and field tested in 1980.

M. PLANS FOR THE FUTURE:

Curriculum development, teacher education, research and evaluation of marine education materials.

N. REPORT SUBMITTED BY: Dr. Bobby N. Irby
Principal Investigator
September 5, 1979

A. TITLE: TEACHERS CONSERVATION WORKSHOP

B. DIRECTOR: Dr. Robert C. Parker
Cooperative Extension Service
P.O. Box 5426
Mississippi State, MS 39762
601/325-6080

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education, urban environmental education

ADDITIONAL DESCRIPTORS: Forest resources education

D. HEADQUARTERS: Mississippi Forestry Association
620 North State Street
Jackson, MS 39201
601/354-4936

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Nature trail, field tours of harvesting operations, demonstrations of forest genetics work, prescribed burning

E. PRINCIPAL STAFF: 17 to 19

CONSULTANT SERVICE UTILIZED: Mississippi Department of Education and the forest industry/agency assisted in the development and updating of each year's program.

F. HISTORY:

1) Principal originators:
   Mississippi Forestry Association (MFA) members (large wood-using industries); Mississippi Cooperative Extension Service
2) Date and place of initiation:
   June, 1963; University of Mississippi forest lands, Perkinston, MS
3) Funding sources utilized:
   MFA funds from industry contribution; agency funds for instructors and travel expenses.
4) Overall purpose:
   To emphasize the importance of conservation of natural resources and to provide information and materials to school teachers for use in the classroom.

G. OBJECTIVES:

1) To promote the teaching of conservation education in the classroom, regardless of the academic subject;
2) To provide materials for teachers;
3) To train teachers in basic conservations principles and topics.

H. MATERIALS:

1) Materials produced:
   No materials were developed especially for the workshop. Existing materials from industries and agencies are used in addition to slide programs prepared by the many instructors.
2) Free materials available:
   Too numerous to list
3) Materials purchasable: None indicated
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

(Our materials are not developed for implementation as a set, but rather for each teacher to use them in their regular curriculum regardless of the subject.)

1) Schools using entire set of materials: 200 to 300
2) Teachers adopting all of the materials: 150 to 300
3) Teachers using some of the materials: 700-900
4) Total students using all of the materials: unknown
5) Totals stated are estimated

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (1 week)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE: None indicated

M. PLANS FOR THE FUTURE:

Workshops will be held each summer, indefinitely.

N. REPORT SUBMITTED BY: Robert C. Parker
Chairman, Mississippi Forestry Association
Curriculum and Instruction Committee Leader
Mississippi Extension Forestry Department
September 14, 1979

A. TITLE: TEACHERS ENVIRONMENTAL CONSERVATION EDUCATION WORKSHOP

B. DIRECTOR: Harold C. Hein
University of Mississippi
University, MS 38677
601/232-7057

C. DESCRIPTORS: Conservation education, environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 20

CONSULTANT SERVICES UTILIZED: University of Mississippi, Soil Conservation Service, U.S. Forest Service, Mississippi Forestry Service, Tennessee Valley Authority, Mississippi Department of Public Health

F. HISTORY:

1) Principal originators:
University of Mississippi and Soil Conservation Service
2) Date and place of initiation:
1969; University of Mississippi
3) Funding sources utilized:
County Soil Conservation Districts
4) Overall purpose:
To provide teachers with the latest information on current conservation practices so that they can educate their students about the value of natural resource conservation.

G. OBJECTIVES: Same as F-4.

H. MATERIALS: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION:

The program consists of a two-week teacher workshop to provide information on conservation practices.

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Thirteen summer workshops attended by 688 elementary and secondary teachers.

M. PLANS FOR THE FUTURE: None indicated

N. REPORT SUBMITTED BY: Harold C. Hein
September 27, 1979

A. TITLE: ENVIRONMENTAL ECOLOGICAL EDUCATION (TRIPLE E)

B. DIRECTOR: Verlin M. Abbott
Parkway School District
455 North Woods Mill Road
Chesterfield, MO 63017
314/434-8412

C. DESCRIPTORS: Conservation education, environmental education, outdoor education.

ADDITIONAL DESCRIPTORS: Suburban environmental education.

D. HEADQUARTERS: Same as B.

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Nature trail and study guide sixth grade five-day resident (camping) program. Mobile laboratory.

E. PRINCIPAL STAFF: 2 presently (6 during initial development).

CONSULTANT SERVICES UTILIZED: None.

F. HISTORY:

1) Principal originators:
Verlin M. Abbott wrote original proposal.
2) Date and place of initiation:
July, 1971.
3) Funding sources utilized:
E.S.E.A. Title III and school district support.
4) Overall purpose:
To train teachers, develop curriculum materials, and offer experiences to students K-12 in environmental education.

G. OBJECTIVES:

1) As a result of the six weeks of inservice workshops, 80 percent of the participating teachers will show a significant knowledge gain on pre-post test using a "t" test significant of difference where the critical value for "t" is 1.677.

2) As a result of training and experience received during the inservice workshop the participants, working in small groups, will during the six weeks, develop general interdisciplinary units dealing with specific environmental topics for students at a specified age span, i.e., primary, intermediate, junior or senior high. Said units will incorporate behaviorally stated objectives

that reflect cognitive knowledge and skill dimensions as well as affective dimensions where appropriate.

3) As a consequence of teacher preparation, neighborhood and community inventories, teacher-developed curriculum and other appropriate planning, 60 percent of the 18,000 participating students will complete at least 70 percent of the stated behavioral objectives from at least one curriculum unit.

4) As a result of experiences in the environmental interpretation center, 50 percent of the 4,500 K-6 students using the facility will demonstrate mastery of at least 80 percent of the basic skills of field research for their level through the proper use of outdoor laboratory equipment from the mobile lab.

5) As a result of experiences in the environmental interpretation center, 50 percent of the 4,500 students, K-6, using the facility will demonstrate more interest and appreciation than previously indicated for aesthetic surroundings by added expression of their awareness and perceptions of the environment through the creative media of art, music and writing.

6) Having experienced a five-day resident program, 90 percent of the 2,500 sixth grade students will demonstrate and orally relate to peer groups, teachers, parents and high school counselors, their improved abilities to (1) learn to live and work together as a group, (2) work democratically and still meet individual needs, (3) understand and appreciate one another's points of view, (4) understand the differing roles which members assume, and (5) participate as a member of a group. In addition, 90 percent of the students will measure significantly higher on pre-post tests of knowledge acquired through the resident experience.

H. MATERIALS:

Overview of Project

1. Because students today are decision makers of tomorrow, all students must be taught about environmental quality. What is it? How can we achieve it? What is its basis in ecology?

   Students must know and understand much more than the present average citizenry does about the problems of human survival in the twentieth century. They have need to be exposed to this knowledge so that an understanding and appreciation of our world becomes an integral part of their lives.

   Within the 70 square mile St. Louis Suburban Parkway School District, there lives a diversity of population, poor - wealthy, urban - rural, management - labor, majority - minority. Two elementary schools through active PTA support and funding had conducted a five-day resident program for their sixth grades. One high school was attempting an ecology course through team-teaching between science and social studies although the team never fully materialized. There was evident need for the establishment of a district wide coordinated interdisciplinary environmental ecological education curriculum for all levels of instruction. This program would be utilized throughout the academic year, during the summer school classes and for handicapped students during a special summer program.

2) The general purpose of the project then is through teacher inservice training to prepare and implement a variety of district wide, inquiry oriented, interdisciplinary environmental ecological education (EEE) programs which would actively involve students, improve desired attitudes of the student population, raise the level of understanding of how all parts of the environment relate or interact with one another, increase student mastery of basic skills of field research, increase student interest and appreciation for aesthetics of natural surroundings, improve student social attitudes, increase growth and development of handicapped children in observation and motor skills related to outdoor environmental activities, and establish a continuing inservice training program within each elementary building for teaching staff.

3) During the past 27 months, one hundred thirty - two elementary, junior and senior high public and parochial teachers have participated in three six-week summer programs. Each received instruction in basic ecological concepts and orientation to developing curriculum units for students K-12. Nearly 12,000 students, K-6, have participated annually in activities designed in these units. Over 5,800 students, grades 7-12, are involved through either units taught in unified studies or a half unit elective course, EEE. In addition nearly 300 elementary teachers have participated in inservice workshops conducted by EEE staff personnel and 28 teachers, elementary and secondary, have taken a graduate credit course offered by the project director. High school students are used with the resident program as counselors at a ratio of one counselor to twelve six graders. These high school students receive a minimum of twelve hours training prior to their assignment. To the present 393 high school students have participated in the sixth grade program. Materials prepared during the project include 17 elementary units, nine junior high, four senior high, 15 mini-units used with the resident program, a resident program guide and a trail guide for the environmental interpretation center.

Facilities include 25 inventoried school sites, a ninety-eight acre LEA-owned environmental interpretation center designed for field research activities to utilize pertinent outdoor laboratory equipment in problem solving during daily field trips and a leased YMCA Camp located in Clarke National Forest near the St. Francis Mountains of Missouri. Equipment for field studies at the variety of sites is provided through an appropriately equipped 27 feet mobile field laboratory.

I. IMPLEMENTATION:

1) Schools using entire set of materials: 4
2) Teachers adopting all of the materials: 150
3) Teachers using some of the materials: 300
4) Total students using all of the materials: 7,000
5) Totals 2,3,4 estimated; 1, definite
6) Selected schools where the program materials are being used:

Parkway School District
455 North Woods Mill Road
Chesterfield, MO 63017

Winona School District
Winona, MO 65588

Van Buren School District
Van Buren, MO 63965

Revere School District
Revere, MO 63465

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   - Workshop (3-5 days)
   - Evening Classes (15 three hour sessions)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None.

K. MATERIALS EVALUATION:

1) Evaluator:
   National Validation Committee
2) Pertinent published research on evaluation: No response.
3) Unpublished research summary:
   See L below.

L. SUMMARY OF ACTIVITIES TO DATE:

Objectives 1) and 2) of G (above) were met through three project-conducted six-week summer workshops held for teachers, elementary, junior high and senior high. Each teacher received instruction in basic ecological concepts, the application of ecological concepts to environmental management, the development of value constructs concerning resources and their management, the preparation and implementation of outdoor activities, to develop environmental concepts, and the means of surveying and inventorying resource potentials within the community. In addition teachers were presented with and instructed in the use of "The General Teaching Model", which is a procedural guide for the design, implementation, evaluation, and improvement of instruction. During the workshops seventeen elementary, nine junior high, and four senior high interdisciplinary environmental curriculum units were prepared respectively.

With the support of the project staff, one staff member assignment to five schools, teachers are implementing the units at each level. Activities on which student experiences are based are found among the units. All activities are structured in behavioral terms to allow for identification of that knowledge and those skills sought for be the unit developers. Many activities are designed to take place in the environmental interpretation center as well as at local school and community sites.

At the resident program site, students engage in curriculum experiences which have been orientated toward outdoor activities and are not duplicated in the regular classroom. Curriculum mini-units developed for this program are Economic Geology, Creative Dramatics, Weather, Water Environment, Archery, Natural Arts and Crafts, Cemetery Study, Folklore, Water Wheel, Spillway, Tracks, Sand Casting, Cave Study, North and South Facing Slope, and Meadow Study. Students live in cabins with a high school counselor, usually at the ratio of twelve to one. Each student has an elected office with certain responsibilities upon which the others in the cabin must depend. Each school group is accompanied by a project staff member and teachers from the school at a ratio of twelve to one including the school nurse.

Two project-developed units, Communities in Nature and The Living Forest, are used as the basis for activities with handicapped student summer program held at the environmental interpretation center. The mobile lab provides equipment to support these activities. Battery powered personnel carriers are utilized to transport orthopedically handicapped students from the mobile lab throughout the center for observing, collecting, or conducting on-the-spot investigations. Volunteer high school students are used as aides in moving wheel chair students and conducting small group games and activities.

To operate the project in a school district as large as Parkway requires a coordinator (director in this case) and five staff members, one for each one hundred teachers using the programs. In order to maintain an interdisciplinary atmosphere as well as having dependable input into curriculum materials the selected staff vary in Missouri Certification. These include English, Math, Biology, Elementary Education, and Home Economics. The project director holds certification in four of the above plus Chemistry, Physics, Earth Science, Social Studies, and Core Curriculum.

In order that staff members have continual contact with one another as well as the Director, each records their daily activities, reflections, concerns, and suggestions on tape. These tapes are delivered to the secretary who types them and routes a copy to each project staff member. These are used as a basis for a portion of each weekly staff meeting.

One source of project support in unanticipated strength has been the local chapters of the Missouri Historical Society. Their cooperation in furnishing information, speakers, and facilities have greatly influenced the success of two of our elementary units. One elementary teacher, as a result of having worked in the summer workshop, developed such an interest in Parkway History that she now has a weekly column in the community newspaper and is a popular speaker at a number of community group meetings.

Evidence of Effectiveness

1. Evaluation Strategy

   a. Cognitive achievement

      In order to test the knowledge gain of teachers in workshop participation and students upon completing of units, pre-post tests are used and "t" test of significance of difference determined.

   b. Skill development

      Teachers observe students participating field research problems and achievement on a project staff-developed instrument.

      Staff-observed improvement and parent feedback are used to determine attitude and motor skill improvement of the handicapped students.

   c. Attitude change

      A staff-developed teacher attitude rating scale is used to determine change. Pre-post scores are compared.

      Teachers record increased creative behaviors in activities such as music, art, writing, etc., related to environmental activities.

      Teacher response on pre-post evaluation survey shows observed changes in social and environmental attitudes of students participating in the resident program. A "t" test of significance of difference is determined.

   d. Behavioral objectives

      Teachers record the number of behavioral objectives successfully completed by each student during the teaching of a unit.

2. Evaluation Results

Based on the first objective the problem was to determine whether or not the acquisition of conceptual knowledge by 80% of the participants was indeed affected by that workshop and whether it was significant. An instrument was developed by project staff which included cognitive demands in seven areas: Ecology, General Teaching Model, Writing Behavioral Objectives, Identifying Performance Objective, Writing Performance Terms, Drawing a Food Chain and Listing Environmental Activities. Pre and post scores were compared and a related "t" test of significance of difference on the total score showed 14.9189. Assuming the instrument was valid, it is not difficult to conclude from this data that the conceptual knowledge increase was significant. Examination of the percent data shows that 88.38% of participants showed a significant gain.

A non-written project objective as to determine whether or not there was a gain in the acquisition of acceptable attitudes by the participants as a result of that workshop. An instrument was designed by the project director similar to "Attitude Cluster, Survey on Environmental Problems" developed by Clifford E. Knapp, Department of Conservation and Outdoor Recreation, SIU, Carbondale. This instrument contains seventy-two statements, twelve each on six selected problems of the environment. These are air, water, wildlife, vegetation, soil and land use. To react to each statement the participants were given the option of checking on a five rating scale, highly favorable, favorable, undecided, unfavorable, and highly unfavorable. The placing of the items on the continuum provides the participant an opportunity to indicate the extent to which he favors or disfavors an item. By definition, an attitude indicates the degree of positive or negative affect associated with a topic. It was determined by the Project Staff that a shift toward the hypothetical response from pre- to post test would be an indication of gain in acceptable attitudes toward EEE concerns. From the data, it was determined that there was a shift toward the hypothetical from pre- to post-test although deviation from the hypothetical remained great. It would appear that at the beginning of the workshop, participants were eager to solve environmental problems without sufficient thought of the consequences. But during the workshop, attitudes were changed as presentations and activities stimulated more rational thinking and partitipants realized that all possible actions are not positive. Further evaluation could have been accomplished if values had been assigned and scores reduced to standard scores with respect to each variate, for the sample of persons concerned as with a Q technique. In addition, a "t" test of significance of difference could have been made.

Random sampling from teacher records indicating student achievement of each behavioral objective for each unit were taken. From the 10% samples which represented all grades, results were as follows:

% students	% of Behavioral Objective completed
14	73
19	80
22	86
17	93
10	100

A 10% random sampling of teacher reports indicated students are acquiring at least 80% of the basic skills of field research named on the project check list.

Through creative behaviors, students have demonstrated their increased appreciation of aesthetic natural aspects of the environmental interpretation center in creative art, music and writing following field trips by using aspects of nature as the subject for paintings, poems and compositions. Primary students respond through letter writing. To the present, no successful quantitive measuring instrument has been devised to determine more interest and appreciation. Teacher records and visual evidence of student products are currently used for reporting evidence.

Based on the objective it was our problem to determine whether or not the social and environmental attitudes were indeed affected by the resident program. An instrument was developed in the form of a rating scale to be completed by teachers of the students immediately before and after that student participated in the resident program. The rating scale produced a numerical score. Out of the group of students 10% were selected at random. Pre and post scores were compared. Application of the "t" test of significance of difference yielded a 33.006 on the social attitude and 49.6493 on the environmental attitude. It is difficult to draw absolute conclusions from this data in that the validity for such affective instruments is subject to concern. But in combination with the heretofore mentioned teacher rating scales, one can assume at least some confidence in speaking to affective objectives. It was also our problem to determine whether or not the student would show a gain in specific knowledge as a result of participating in the five day resident program. An instrument was designed in the form of a 50-point objective test based on content found in the curriculum units. It was given to students immediately prior and following the resident experience. From 10% random samplings results show that no student scored less on the post than on the pre-test and the average pre-test score was 17 compared with an average post-test score of 41.5. Further evaluation could have been carried out in the form of a "t" test of significance of difference but it was felt unnecessary to meet the objective.

Because the ages of the handicapped students ranged from six years to twelve years, it was decided that to give a standard achievement test would not render the results desired. The decision was made to base the evaluation on EEE Staff-observed differences in student behavior early and late in the summer pr program and upon parent's response. The EEE Staff noted considerable change in interest and attitude toward outdoor activities, increased skills in observation, and improvement in manipulation of equipment. Parents letters reinforced the observations of the staff and indicated additional benefits such as improved speech. Taped student responses to staff oral post-test questions are a matter of record.

Costs

Developmental costs per enrolled student were approximately, $22.50 (combined three year LEA support cost and Title III money divided by total school enrollment of 22,000). A substantial amount of the project costs was spent training teachers for development of curriculum materials. These can be capitalized upon by an adopting district, so costs of adding of the curriculum guides would be that of printing and binding only.

Current estimations are that LEA cost of supporting the completed project program will be $5.90 per enrolled student. 50% of this amount will be spent on staff salaries who will continue to coordinate curriculum activities, conduct inservice workshops, and direct the resident program for their assigned buildings. A reasonable budget excluding salaries for an elementary school of 700 students would be $625, divided into areas of transportation (field trips and resident site) $400, library resource materials $100, $25 for teacher guides, and $50 for consumable supplies.

Interested school systems should be aware that neither the cost of the 98 Acre Environmental Interpretation Center nor the cost of food and housing of students in the five day resident program is included in the costs stated above. This is a reasonable procedure in Parkway in that the center acreage serves other district purposes and student resident costs pose no financial problem to most parents. PTA and other community service organizations aid those few who are unable to support themselves. While the outdoor center is not an indispensable component of the program, potential adopters may wish to identify available outdoor community resources.

Publications and Materials

The established format of the EEE curriculum teacher guides are: setting, concepts, behavioral objectives, pre-post test, teacher background information, instructional sequence, student activities, data sheets, and bibliography. At the senior high level, student mini packets were added to give a greater degree of individualized study. Charges of $2.50 for elementary and $4.00 for secondary teacher guides are for handling and shipping cost only. A guide explaining organizing, pre-site preparation, and on site conducting of the resident program is also available at $4.00.

Titles of teacher's guides are as follows: K-3: Sound - in the Environment, Communication, Communities in Nature, Everything You've Always Wanted to Know About Weather - But Were Afraid to Ask, Farm - Its Function and Future, and Transportation. Grades 4-6: The Class-Room as a Miniature Society, The Changing Scene, The Dripping Springs Water Fall, Environmental and Architectural Influence on Homes, The Living Forest, Metropolitan Sewer District, Paper, The School District (operation, procedures and peoples involved in a school district), Planning for the Future on Spaceship Earth, The Pond as a Micro-society, and Topography. Junior High: Land Use, Life on the Mississippi River, Trash - Our Only Growing Resource, Preservation and Conservation Within a Metro Community, Waste of a Community Resource - Vandalism, Two Considerations: Clothing-Dress and Recreation-Leisure Time, Meet Me At St. Louis, Louie, But Leave Your Car at Home, (Transportation), Boomsville to Doomsville (Development of Industry) Development of a Subdivision With the Parkway School District. Senior High: Population, Wet and Wild (rivers, springs and wilderness area of the Ozark region of Missouri), Land Utilization and Air Pollution.

Exportability Factors

The EEE program can be adapted to any size or type of school district. Minor modification of some units might be in order to fit their individual situation. A School District may implement one or all parts of the program in one or all of its buildings. Special factors for consideration of adaption might include: a cooperative and supportive administration and/or building staff with willingness to accept tested teacher-developed curriculum materials, identification of a lead teacher for implementation within a building or preferably one full time staff person working at a ratio of one per four elementary and one secondary building. (It is recommended that this person or persons visit Parkway for at least one week to become involved first hand with program materials, procedures, and facilities). School and community site resources must be identified for use as environmental study areas, a pre-service and continuing inservice program which provides opportunity for teacher participation in environmental curriculum activities to acquire knowledge and skills that they may lead students in an interdisciplinary inquiry approach to learning, and a suitable location identified and available for implementation of the resident program.

M. PLANS FOR THE FUTURE:

Develop a program in Energy Education.

N. REPORT SUBMITTED BY: Verlin M. Abbott
Project Director
September 16, 1979

Previous Directory Reference: 1975

ERIC Documents:

ED 079 106	Environmental Ecological Education Program, Interim Evaluation Report July 1, 1971 - June 30, 1972
ED 097 218	Vandalism
ED 097 219	Planning for the Future on Spaceship Earth
ED 097 220	Paper
ED 097 221	The Living Forest
ED 097 222	The Farm...Its Function and Future
ED 098 067	Everything You've Always Wanted to Know about Weather but Were Afraid to Ask
ED 098 068	The Development of a Subdivision Within the Parkway School District
ED 098 069	Meet Me in St. Louis, Louie, but Leave Your Car at Home (A Unit in Transportation)
ED 098 070	Trash-- Our Only Growing Resource
ED 098 071	Air Pollution
ED 098 072	Population
ED 098 073	Communities in Nature
ED 099 209	Social Aspects of Conservation - Two Considerations
ED 099 210	This Land is Your Land: The Problem of Land Utilization
ED 099 211	Communication: Within the School Site, Community, and Area Into Space
ED 099 212	The Changing Scene - A Short History of the Parkway Area
ED 099 213	"Boomsville to Doomsville" - Development of Industry Within a Community
ED 100 649	Environmental and Architectural Influences on Homes
ED 100 650	The Classroom as a Miniature Society

A. TITLE: PROJECT OUTDOOR EDUCATION

B. DIRECTOR: Dorothy Grant
Project Outdoor Education
New Haven R II School
New Haven Road
Columbia, MO 65201
314/442-5320 or 474-2267

C. DESCRIPTORS: Outdoor education

ADDITIONAL DESCRIPTORS: Interdisciplinary modules in English, social studies, and science

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Stress-challenge ropes course

E. PRINCIPAL STAFF: 23

CONSULTANT SERVICES UTILIZED: Project Adventure; University of Missouri, Columbia, Dr. Paul Ritchie

F. HISTORY:

1) Principal originators:
   Dorothy Grant
2) Date and place of initiation:
   1975
3) Funding sources utilized:
   ESEA Title IV-C
4) Overall purpose:
   To increase self-confidence, self-worth, enjoyable life-time leisure activities

G. OBJECTIVES: None indicated

H. MATERIALS:

1) Materials produced:
   Objectives were written the first year; additional grade levels have been added each year.
2) Free materials avaiable: None
3) Materials purchasable: None
4) New instructional materials being developed:
   For each grade level
5) Materials anticipated for development: None
6) Commercial associations: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 2
2) Teachers adopting all of the materials: 23
3) Teachers using some of the materials: 23
4) Total students using all of the materials: 400+
5) Totals stated are definite.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (2 days to 1 week)

K. MATERIALS EVALUATION: In progress

L. SUMMARY OF ACTIVITIES TO DATE:

Project activities have been developed to coordinate with the various units at each grade level.

The major object of the project is to provide students with learning experiences outside the classroom setting.

M. PLANS FOR THE FUTURE:

A continuation of activities now in progress.

N. REPORT SUBMITTED BY: Dorothy Grant
November 26, 1979

A. TITLE: ENVIRONMENTAL EDUCATION TEACHER TRAINING PROGRAM

B. DIRECTOR: Dr. Gail S. Ludwig
6 Stewart Hall
Department of Geography
University of Missouri
Columbia, MO 65211
314/882-3233

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Land use, planning

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 2

F. HISTORY:

1) Principal originators:
   Dr. Gail S. Ludwig
2) Date and place of initiation:
   August, 1977; Geography department of University of Missouri
3) Funding sources utilized:
   University of Missouri Extension Division; U.S. Geological Survey; Missouri Office of Administration
4) Overall purpose:
   See Objectives (G) below.

G. OBJECTIVES:

To provide up-to-date information and materials to teachers interested in environmental education.

H. MATERIALS:

1) Materials produced:
   We maintain files of environmental education materials for educators. We have a guide to Missouri map products, a high school/adult resource guide
2) Free materials available: None
3) Materials purchasable:
   Users Guide to Missouri Maps, $2.95, from University of Missouri Extension Publications
4) New instructional materials being developed:
   For grade levels high school, college and adult
5) Materials anticipated for development:
   Workshop materials dealing with land use planning
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: unknown
2) Teachers adopting all of the materials: not applicable
3) Teachers using some of the materials: 100+
4) Total students using all of the materials: not applicable
5) Totals stated are estimated.

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (varies in length according to topic)
   Summer Institute (6 day, 3 day, 1 day)
   Evening Classes (semester, 1 night per week)

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Selected teachers
2) Pertinent published research on evaluation: None
3) Unpublished research summary:
   Dissertation: Geography and Environmental Education: a Handbook for Teachers; unpublished dissertation by Gail S. Ludwig, University of Northern Colorado, Greeley, CO; August, 1977

L. SUMMARY OF ACTIVITIES TO DATE:

Most work and activities are jointly sponsored with state agencies. Usually 8 to 10 workshops per year are organized in various locations around the state.

M. PLANS FOR THE FUTURE:

Teacher workshops and seminars.

N. REPORT SUBMITTED BY: Gail S. Ludwig

September 28, 1979

A. TITLE: COLUMBIA SCHOOLS ENVIRONMENTAL EDUCATION PROGRAM

B. DIRECTOR: John Willenberg
Rock Bridge State Park
Columbia, MO 65201
314/449-7402

C. DESCRIPTORS: Energy education, environmental education, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Mobile Lab -- converted school bus with equipment and materials plus space for 20 to 40 people.

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: Training in acclimatization, forest service task sequencing, ECOS (New York) and ECO (Iowa).

F. HISTORY:

1) Principal originators:
   Title III and IVc grants through Columbia schools
2) Date and place of initiation:
   July 1974
3) Funding sources utilized:
   State, local (civic club), and Title IV
4) Overall purpose:
   Build a sense of relationship between man and his environment.

G. OBJECTIVES:

1) Train teachers how to teach environmental education;
2) Train teachers how to work with children in the out of doors;
3) Introduce philosophy of environmental education;
4) Have half day field trips with students and teachers using mobile lab as a resource base; and,
5) Develop a K-6 guide series integrating school curriculum with reinforcing activities.

H. MATERIALS:

1) Materials produced:
   Guides for grade levels K - 3, 4, 5, 6 and 7
   Pocket cards used in identifying tracks, fossils, tree seeds and ferns.
2) Free materials available:
   The pocket cards
3) Materials purchasable:
   Guides for various grade levels -- K-3 ($3.50); 4, 5 and 6 ($2.50). Available from IMC, Douglas Materials Center, 310 North Providence Road, Columbia, MO 65201.

4) New instructional materials being developed:
   Naturalist guide for grade levels K-6.
5) Materials anticipated for development:
   Cards, films and slides
6) Commercial associations: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 16
2) Teachers adopting all of the materials: 300
3) Teachers using some of the materials: 100
4) Total students using all of the materials: 30,000
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Rock Bridge Elementary School
Route 4
Columbia, MO 65201

Blue Ridge Elementary School
2801 Leeway Drive
Columbia, MO 65201

Ridgeview Elementary School
Warrensburg, MO 64093

Two Mile Prairie Elementary School
Route 6
Columbia, MO 65201

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (4 hours plus)
   Evening Classes (2 to 4 evenings)
5) Available pre-service and or in-service teaching materials for educators to use in preparing teachers:
   Handouts

K. MATERIALS EVALUATION:

1) Evaluator:
   Columbia School personnel using pre/post tests, chi square, and t-test data.
2) Pertinent published research on evaluation:
   Title IV grant reports
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

The Columbia Public Schools environmental education program is an interdisciplinary approach tying together the existing classroom curriculum with both environmental problems and a look at the natural world.

The subject areas hit the hardest are language arts, social studies, science, and art with carry over into math. The infusion method used was to find ten concepts that were common to the classroom and the program. Using these as a base, we developed activities that reinforced the existing curriculum but with a focus on the natural world and/or on environmental problems. Each activity is developed using a task sequencing approach so that the activities carry the educational experience full circle. Guides using this approach have been developed for grades K-6 plus a 7th grade science guide and achievement and attitude tests for grades 4, 5, and 6.

Other elements of the program are: In-service for teachers dealing with the philosophy of environmental education, working in the out of doors with children, and how to use the scope and sequence chart in the guides; the mobile lab which is a classroom and resource center on wheels; and finally, resource materials for the teachers to help build environmental centers into the classrooms.

M. PLANS FOR THE FUTURE: None indicated

N. REPORT SUBMITTED BY: John Willenberg
September 18, 1979

A. TITLE: KIRKWOOD OUTDOOR NATURAL SCIENCE PROGRAM (KONSP)

B. DIRECTOR: Bruce Crowe
Kirkwood School District
801 West Essex
Kirkwood, MO 63122
314/966-5700, ext. 1274

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Human relations in outdoor setting

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Nine nature study centers

E. PRINCIPAL STAFF: 1½

CONSULTANT SERVICES UTILIZED: Planned assistance from Botanical Gardens staff in elementary teacher training workshops

F. HISTORY:

1) Principal originators:
Project director and previous school staff members
2) Date and place of initiation:
1979, and outgrowth of the 1976-1979 Wilderness classroom.
3) Funding sources utilized:
Federal funds under Title IVc for Wilderness classroom; KONSP locally funded.
4) Overall purpose:
To give students a better understanding and awareness of both their natural/physical environment and their interpersonal relations and responsibilities.

G. OBJECTIVES:

Specific objectives are extensive; overall purpose (F-4) should suffice.

H. MATERIALS: In process of development

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
Workshop (2 hour)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Project activities to date include developing the program proposal, accumulating and isolating curriculum material and planning logistical procedures. The "materials" have yet to be printed or evaluated as we are beginning the first year of a developmental project.

M. PLANS FOR THE FUTURE:

Synthesis and publication of specific curriculum for K-12 outdoor science education program.

N. REPORT SUBMITTED BY: B. Crowe
September 11, 1979

A. TITLE: OUR OWN BACK YARD

B. DIRECTOR: Becky Mendenall
R-14 School
Lonedell, MO 63060
314/629-0401

C. DESCRIPTORS: Conservation education, energy education, natural resources

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 9

CONSULTANT SERVICES UTILIZED: Yes

F. HISTORY:

1) Principal originators:
   Becky Mendenall, Ken Thorpe
2) Date and place of initiation:
   July 11, 1978; Lonedell, Missouri
3) Funding sources utilized:
   Elementary and Secondary Education Act of 1965, Title IV-C
4) Overall purpose:
   Acquaint students K-8 with the county--environmentally, historically, government, etc.

G. OBJECTIVES:

1) The teachers have developed a curriculum about Franklin County.
2) Students will show 40 percent gain in the year--pretest and posttests given about Franklin County.

H. MATERIALS:

1) Materials produced: None indicated
2) Free materials available: None indicated
3) Materials purchasable: None indicated
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 6
2) Teachers adopting all of the materials: 6
3) Teachers using some of the materials: 14
4) Total students using all of the materials: 150
5) Totals stated are estimated.

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: None indicated
3) Pre-service training program: None indicated
4) Kinds of preparation programs: None indicated
4) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: Curriculum and unit plans developed by teachers. Materials are not commercially available.

K. MATERIALS EVALUATION: First-year evaluation for Title IV-C

L. SUMMARY OF ACTIVITIES TO DATE:

Our school district is only one school K-8. Our program has been geared to our needs.

M. PLANS FOR THE FUTURE:

Continue to develop student-made films and slides about county and regional resources.

N. REPORT SUBMITTED BY: Becky Mendenall
September 7, 1979

A. TITLE: WILDLIFE, MAN, AND THE ENVIRONMENT:
MONETT ELEMENTARY ODC (OUTDOOR CLASSROOM)

B. DIRECTORS: Roberta Osterloh/Betty Lohraff
400 Linden
Monett, MO 65708
417/235-3411

C. DESCRIPTORS: Conservation education, environmental education, outdoor education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: No paid personnel

CONSULTANT SERVICES UTILIZED: Missouri Conservation Commission has served as consultant since inception of project; Robert Lentz of "Project Adventure" held a one-week in-service for teachers through a Title IV-C adoption.

F. HISTORY:

1) Principal originators:
   Roberta Osterloh, Elementary Principal; Ross Allen, David Pitts, Missouri Conservation Commission; Dr. Ralph Scott, Missouri Superintendent of Schools
2) Date and place of initiation:
   Fall, 1976
3) Funding sources utilized:
   Title IV-C through State Department of Education, $4,500; Public Service Employment grant through Missouri Job Service, $5,000; grant from Missouri Department of Conservation, $300
4) Overall purpose:
   To provide a setting for outdoor education in which all subject matter can be correlated with the out-of-doors

G. OBJECTIVES:

To increase student/teacher participation in the ODC.
To formulate a written guide to assist teachers in the utilization of the ODC.

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--a teachers guide. We are finishing a slide presentation featuring the ODC.
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed:
   Slide presentation; although of interest to children, it will be used to promote the ODC to civic groups, Missouri Conservation Commission, provide in-service, etc.

5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 3
2) Teachers adopting all of the materials: 40
3) Teachers using some of the materials: 40
4) Total students using all of the materials: 800
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Monett Elementary School
400 Linden
Monett, MO 65708

St. Lawrence Catholic School
704 7th Street
Monett, MO 65708

Trinity Lutheran School
Freistatt, MO

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program:
    Only in-service for teachers new to system
3) Pre-service training program: No formal program
4) Kinds of preparation programs:
    Workshop (1 week)
    Summer Institute (1 week)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: No

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Missouri Conservation Commission met with school officials and designated trails on a 15-acre tract on elementary school grounds.

Public Service Employment grant from Missouri Job Service provided five men to work 3 or 4 months on the facility.

Missouri Conservation provided redwood for signs, soda ash to seal pond, etc.

Volunteer parents planted quail cover, worked on maintenance, etc.

Robert Lentz conducted a one-week summer workshop for teachers at the site. Participants wrote guide for teachers.

M. PLANS FOR THE FUTURE: No

N. REPORT SUBMITTED BY:

Roberta Osterloh
Elementary Principal and Project Director
September 6, 1979

A. TITLE: AH-NEI, THE SPECIAL CLASSROOM

B. DIRECTOR: Deborah L. Richau
101 10th Street West
Billings, MT 59102
406/259-6962

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, urban environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED: Yes, consultants from many federal and state agencies were used in the implementation.

F. HISTORY:

1) Principal originators:
    Bureau of Land Management; Billings School District #2
2) Date and place of initiation:
    Fall, 1977; Billings School District
3) Funding sources utilized:
    Bureau of Land Management; School District #2;
    ESEA; Title IV-C
4) Overall purpose:
    To demonstrate the process by which an Environmental Education program is planned; development procedures, financing administration, implementation and evaluation.

G. OBJECTIVES:

Train a community team the processes of developing a program concordant with existing school philosophies, using the total surroundings as a teaching tool.

H. MATERIALS:

1) Materials produced:
    Primary (K-6)--"Ah-Nei, The Special Classroom," a guide book for teachers; the Billings Environmental Attitude Assessment Instrument
    Other--A slide show explaining the project for adults has been developed.
2) Free materials available:
    Ah-Nei, The Special Classroom, teacher guide book.
3) Materials purchasable: None
4) New instructional materials being developed:
    K-12
5) Materials anticipated for development:
    Secondary curriculum guide book
6) Commercial association: No

I. IMPLEMENTATION:

1) Schools using entire set of materials: 60
2) Teachers adopting all of the materials: 200
3) Teachers using some of the materials: 1,200
4) Total students using all of the materials: 10,000
5) Totals stated are estimated, as of 1977-78
6) Selected schools utilizing the program materials:

Helena School District Jefferson School 1023 Broadway Helena, MT 59601	Miles City School District Lincoln School Miles City, MT 59301
Bozeman School District Hawthorne School 114 North Rouse Bozeman, MT 59715	Lolo Elementary School Lolo, MT 59847

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (one weekend - 12 hours)
5) Available pre-service and/or in-service teaching materials: No

K. MATERIALS EVALUATION:

1) Evaluator(s):
   Validation Committee for State Demonstration Site
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

"Ah-Nei, The Special Classroom," Title IV Demonstration Site for Environmental Education trains teams consisting of teachers, administrators, resource agency personnel, and school board members. With this team, a training session of one week in length gives them a vehicle to go back home, and through a two-year plan, establish environmental education techniques and skills in the existing curriculum of the school. My office and consultants are responsible to each team for follow-up visits and training for at least two years. Each team develops its own program. In addition to the Demonstration Site training, each team may host a community-wide workshop to train other teachers and community members how to best use their program. The Montana Environmental Education Service Association assists in the follow-up training and also serves as a communication thread for those of us involved in Environmental Education.

M. PLANS FOR THE FUTURE:

We plan to develop a training model for agencies. Both the Department of the Interior agencies and the Department of Agriculture emphasize environmental education in their annual work plans; however, training for the agencies in how to work with schools in particular is an area that we feel we could facilitate.

N. REPORT SUBMITTED BY: Deborah L. Richau
November 13, 1979

ERIC Document:

ED 134 433 Environmental Education Curriculum Guide--K-Grade 5

A. TITLE: PROJECT PLUM (PROGRAMS AND LAND USE MODELS)

B. DIRECTOR: Steven C. McCaw
700 Camp Gifford Road
Bellevue, NE 68005
402/292-4102

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Agricultural education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE:
Farm tours for elementary children.
Forest/farm tours for secondary students (all are seasonal).

E. PRINCIPAL STAFF: 4

CONSULTANT SERVICES UTILIZED:
Several local teachers have been involved in writing units.
A local landscape architectural firm aided in the development of a site development master plan.

F. HISTORY:

1) Principal originators:
The Metropolitan Educational Program Agency--a consortium of 20 Omaha/Council Bluffs school districts and agencies.
2) Date and place of initiation:
August 1, 1977
3) Funding sources utilized:
ESEA, Title IV-C - Iowa and Nebraska State Departments of Education
4) Overall purpose:
-To develop master development plans for a 1,700-acre farm/forest agricultural/environmental learning center.
-To write a series of study units on agriculture and the conservation and management of soil, energy, woodlands, land, wildlife, and water. A unit on climate and agriculture is also included.

G. OBJECTIVES: Same as above

H. MATERIALS:

1) Materials produced:
Primary (K-6)--"Introduction to the Farm" (grades K-3)—teacher guide, slide/tapes, ditto masters.
"Food--From the Land to You" (grades 4-6)—teacher guide, slide/tapes, ditto masters.

Secondary (7-12)--"Soil--Our Most Valuable Resource" (grades 7-9)—student text, teacher guide, ditto masters; "Managing Our Woodlands" (grades 7-9)—student text, teacher guide, ditto masters.

Other--"Honeybees--Providers of Plenty" (grades K-12)—teacher guide, student activities, slide/tape; "Introduction to the Farm" (primary EMH)—teacher guide, two student activity booklets

2) Free materials available: None presently
3) Materials purchasable:
All the above can be purchased from the project. Prices haven't been established but should be by December 31, 1979.
4) New instructional materials being developed: Grades 7-9
5) Materials anticipated for development:
"Wildlife on the Farm"
"Agriculture and How We Use our Land"
"Agriculture and Energy"
"Agriculture and Water"
"Agriculture and Climate"

[All will be in same format as above junior high units; ready: December 31, 1979.]

6) Commercial association: No

I. IMPLEMENTATION:

1) Schools using entire set of materials: None
2) Teachers adopting all of the materials: None
3) Teachers using some of the materials: 30
4) Total students using all of the materials: None
5) Totals stated are estimated.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
Workshop (from 2 hours to 1 day)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION:

Partially; project is still developmental. Selection Research, Inc., Lincoln, Nebraska.

L. SUMMARY OF ACTIVITIES TO DATE:

The first year and a half of the project was devoted primarily to the development of master plans for the site. There was also an effort made to clarify program objectives and begin specific study units. Some materials were developed during the second year of the program and used with some school classes and teachers. Our evaluation of these efforts was inconclusive.

The last six months have been spent in intensive program development. Some units are published and others will be completed by year's end. The last six months of the three-year project will be spent in revision and final evaluation.

At the conclusion of the project in June, 1980, the curriculum materials will be available through either the Iowa Department of Public Instruction or the Nebraska State Department of Education.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Steven McCaw
August 31, 1979

A. TITLE: STUDYING AND OBSERVING INTERACTION OF LIFE (S.O.I.L.)

B. DIRECTOR: Ben Hammerschmidt
217 S. 9th Street
Nebraska City Junior High School
Nebraska City, NE 68410
402/873-5591

C. DESCRIPTORS: Environmental education, outdoor education, population education

ADDITIONAL DESCRIPTORS: Ecology and field biology--limnology, chemistry

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE:
Mobile Lab. Welcome to take part in any field activity

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: Selection Research, Inc. for evaluation.

F. HISTORY:

1) Principal originators:
   Ben Hammerschmidt
2) Date and place of initiation:
   March 1975; Henzlich Hall, University of Nebraska-Lincoln
   February 1977; Department of Education, Lincoln, Nebraska funding
3) Funding sources utilized:
   ESEA Title IV-C
4) Overall purpose:
   To develop an understanding of our earth and the life on it.

G. OBJECTIVES:

1) Project S.O.I.L. is an ecology course for academically talented students in grades 7, 8 and 9. Funding for development has been provided by the Nebraska State Department of Education and the U.S. Office of Education through the Elementary Act, Title IV-C.

2) Ecology is the study of the relationships between living things and their environment. Ecology is thus, an all-embracing science involving concepts from a variety of other areas of science: biology, chemistry, botany, zoology, taxonomy and physics.

3) Project S.O.I.L. is concerned with the natural relationships which can be observed in various ecological systems such as forests, grasslands, streams and lakes. The project has three primary goals: (1) to provide the students with the knowledge

and procedures necessary to investigate, in the lab and in the field, the relationships that exist in nature, (2) to develop the type of citizen that can set standards which will help restore and maintain an environment needed by man and all living things, (3) to develop outdoor lab areas with student involvement.

4) Children should realize at an early age that they share their environment with many other living things that have much in common with them. Ecology must be introduced to youngsters through nature study and later by adding experimentation and deduction as well as increasing their abilities of critical observation and detailed recording. S.O.I.L.'s uniqueness lies in its almost complete reliance on nature as its classroom. Less than 20 percent of the student's time is spent in the building, thus, students are required to use their abilities of observation, deduction and recording.

5) Students are scheduled into S.O.I.L. every other day for a double period of time, thus allowing time for most field work. During class each student is required to record his or her observations and data for each investigation which must always include the meteorological data; sunshine, wind velocity, precipitation, relative humidity, frost and temperature. Students will be involved in a number of activities; (1) Population studies which would require the live trapping of different terrestrial animals, the netting of fish, sampling aquatic invertebrates to determine their total population in an area, (2) Water quality of ponds, streams, and wells will be studied. Water quality would be dissolved oxygen, water color, total dissolved solids, total suspended solids, free acid, free carbon dioxide, and other chemicals in the water, (3) The student learns to use a transit/level, as surveying is also part of the course. These are just a few of the many activities which are available.

6) From the purely personal point of view, the aesthetic value of ecology is sufficient to justify its existence. The quality of the air and water of our country has greatly improved in the last five years. The amount of land set aside for wilderness areas is ever-increasing. People are aware of their surroundings and the effects they have on each other. We hope to continue these efforts, started by others, through the education of children. Nature offers an easy and effective way to motivate and to keep children motivated.

H. MATERIALS:

1) Materials produced:
    Secondary (7-12)--not finished--Water Ecology, Soil Ecology, Atmospheric Ecology
2) Free materials available: None available at this time
3) Materials purchasable: None available at this time

4) New instructional materials being developed:
   Yes, grades 7-12
5) Materials anticipated for development:
   Slide tape show on various lab procedures
6) Commercial association: No

I. IMPLEMENTATION:

1) Schools using entire set of materials: 1
2) Teachers adopting all of the materials: 1
3) Teachers using some of the materials: 0
4) Total students using all of the materials: 100
5) Totals stated are definite.

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs: None
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION:

1) Evaluator:
   Selection Research, Inc.
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

1) Animal population studies
2) Various activities in limnology
3) Pollution studies
4) Solid wastes
5) Energy production
6) Transportation
7) Mapping

M. PLANS FOR THE FUTURE:

1) Water chemistry
2) Soil science
3) Geology

N. REPORT SUBMITTED BY: Ben Hammerschmidt

September 25, 1979

A. TITLE: NEVADA ENERGY AND MAN'S ENVIRONMENT (EME)

B. DIRECTOR: Paul Iverson
2832 E. Flamingo Road
Las Vegas, NV 89121
702/386-4906

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, population education, urban environmental education, economic education

D. HEADQUARTERS: 0224 S.W. Hamilton
Skyline Building-Suite 301
Portland, OR 97201
503/226-7131

SPECIAL FACILITIES FOR VISITORS TO SEE:
Classroom visitation

E. PRINCIPAL STAFF: 20

CONSULTANT SERVICES UTILIZED:
Experts from University and Department of Energy have been used in workshops

F. HISTORY:

1) Principal originators:
   Mr. Kelly Jackson, Nevada Department of Energy; Paul Iverson (CCSD); Jack O'Leary, State Department of Education; power company
2) Date and place of initiation:
   January, 1978
3) Funding sources utilized:
   Power companies; Nevada Department of Energy
4) Overall purpose:
   See E.M.E. Report (Portland, OR)

G. OBJECTIVES:

See E.M.E. Report (Portland, OR)

H. MATERIALS: From E.M.E. Project

1) Materials produced:
   Primary (K-6)--One through Sixth Energy Curriculum Guide Extention
   Secondary (7-12)--Same
   Other--Same
2) Free materials available: Contact E.M.E. Headquarters, Portland
3) Materials purchasable: Contact E.M.E. Headquarters, Portland
4) New instructional materials being developed: All grade levels
5) Materials anticipated for development:
   Sourcebooks for Energy Education (Regional)
6) Commercial association: None

I. IMPLEMENTATION

1) Schools using entire set of materials: All in Nevada
2) Teachers adopting all of the materials: None indicated
3) Teachers using some of the materials: All in Nevada
4) Total students using all of the materials: All in Nevada
5) Totals stated are estimated.
6) Selected schools utilizing the program:

Rose Warren Elementary School
6451 Brandywine Way
Las Vegas, NV 89107

J. M. Ullom
4869 E. Sun Valley
Las Vegas, NV 89121

All schools in Reno

All schools in Carson City

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (4-8 hours)
   Summer Institute (2 weeks)
   Evening Classes (16 hours)
   In-service (1 hour)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   All E.M.E. materials

K. MATERIALS EVALUATION: Contact E.M.E. Headquarters

L. SUMMARY OF ACTIVITIES TO DATE:

1) The Nevada E.M.E. coordinator was selected in December of 1977.

2) In February of 1978 an implementation committee was selected and training sessions conducted.

3) In March of 1978 a major workshop was held in Reno. One teacher from each elementary school attended and was trained in the use and implementation of the E.M.E. materials. These teachers serve as energy resource teachers in their individual schools.

4) In April of 1978 two major workshops were held in conjunction with Sun Day at Clark County Community College. The first workshop was for all school administrators in Clark County. The second workshop was held for all science resource teachers and department chairpersons from each school in Clark County.

The teachers in attendance received material and extensive training. The teachers are designated as energy resource teachers with the responsibility of conducting energy in-services in their individual schools.

5) During the school year of 1978-79 many awareness workshops were conducted throughout Nevada. At the present time some 3000 teachers have attended workshops or school in-services pertaining to Energy Education. Most schools have received E.M.E. and D.O.E. materials and training necessary to use the material effectively.

6) The workshops conducted in the first year and a half were primarily for awareness purposes. Workshops that will be conducted in the future are designated as implementation workshops. Teachers attending future workshops will have the opportunity to write individual lesson plans and construct material useful in implementing an energy program into existing curriculum.

7) Major workshops conducted during the 1978-79 school year:

   Reno junior and senior high school teachers
   Four county workshops held in Elko
   Four county workshops held in Hawthorne
   Panaca workshop--all teachers in Lincoln County
   All teachers in Carson City
   Clark County Social Studies Workshop--Elementary Social Studies resource teachers
   Debate Conference--debate students and teachers
   Three workshops held for members of Junior Academy of Science

M. PLANS FOR THE FUTURE:

1) Implementation workshop
2) Student involvement programs

N. REPORT SUBMITTED BY: Paul Iverson
Nevada Coordinator
September 11, 1979

A. TITLE: ENVIRONMENTAL EDUCATION AND APPRECIATION

B. DIRECTOR: Steven W. Pellegrini
Yerington Intermediate School
215 Pearl Street
Yerington, NV 89447
702/463-3506

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education, population education

ADDITIONAL DESCRIPTORS: quantitative and qualitative field techniques, intrinsic appreciation of environment, cultural and history education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

SPECIAL FACILITIES FOR VISITORS TO SEE:
Director of Reno's Environmental Education Program; Personnel of Bureau of Land Management; U.S. Fish and Wildlife Service; and Nevada Department of Wildlife

F. HISTORY:

1) Principal originators:
   Steven Pellegrini
2) Date and place of initiation:
   September, 1977
3) Funding sources utilized:
   Title IV-C, Federal Mini-Grant (summer of 1978), School Board funding (summer of 1979)
4) Overall purpose:
   To instill an appreciation of the state's historical, environmental and cultural heritage. To learn a respect for managing agencies by becoming involved in environmental science (identification, measurement, censusing, etc.).

G. OBJECTIVES: Same as 4 above

H. MATERIALS:

1) Materials produced:
   Secondary (7-12)--worksheets on plant censusing, coverage, browse, carrying capacity, identification; final class exam
2) Free materials available: None indicated
3) Materials purchasable: None indicated
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 1
2) Teachers adopting all of the materials: None
3) Teachers using some of the materials: None
4) Total students using all of the materials: 28 per summer
5) Totals stated are definite.

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs: None
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

My class is probably the first attempt at environmental education in a Nevada rural school. It has been offered twice; both times for one summer month. The students are all eighth graders. Enrollment, enthusiasm on the part of the students and school administration, cooperation and acceptance by the community and professional staff of my school have all been excellent.

The project is embryonic and threatened by financial difficulties and fuel shortages. I do feel it has great value, however, to the students. In addition to factual learning, I have been able to document tremendous personal growth in my students as a result of this class, both in their feelings toward the environment of the State of Nevada and in their opinion of their own personal value as citizens.

M. PLANS FOR THE FUTURE:

A summer class for 1980. Possibly, if funding becomes available, to expand my program within the school system of the county.

N. REPORT SUBMITTED BY: Steve Pellegrini
August 30, 1979

A. TITLE: DAY LABORATORY IN OUTDOOR EDUCATION AND FIELD SCIENCE

B. DIRECTOR: Leslie S. Clark
Society for the Protection of
New Hampshire Forests
5 South State Street
Concord, NH 03301
603/224-9945

C. DESCRIPTORS: Conservation education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE:
By next year we will have energy programs related to a new headquarters being built

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED: No

F. HISTORY:

1) Principal originators:
   Leslie Clark
2) Date and place of initiation:
   1958; Bear Brook State Park, Allenstown, NH
3) Funding sources utilized:
   Society for the Protection of New Hampshire Forests
4) Overall purpose:
   To introduce teachers and school children to conservation education

G. OBJECTIVES:

1) Soil, water, wildlife and forests are renewable
2) Introduction to forest and wildlife management
3) Succession and its part in nature along with other general ecological processes
4) Appreciation of public land and parks

H. MATERIALS:

1) Materials produced:
   Primary (K-6), Secondary (7-12) and Other--only an introduction guide for teachers
2) Free materials available:
   Introduction guide for teachers
3) Materials purchasable: None
4) New instructional materials being developed:
   Energy guides, grades 3-6, 7-12
5) Materials anticipated for development:
   Energy and our renewable resources
6) Commercial association: None

I. IMPLEMENTATION

Ours is strictly a field trip program open to all schools.

J. TEACHER PREPARATION:

1) Consultative service available: None indicated
2) In-service education program: None indicated
3) Pre-service training program: None indicated
4) Kinds of preparation programs:
   Summer Institute (one week)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Ours is strictly a field trip program conducted on public land to get acquainted with our renewable resources. It is done in classroom units.

M. PLANS FOR THE FUTURE:

In connection with a new low-energy headquarters, we are planning programs that explore solar, wood and wind energy--waterworks--sewage disposal without water, etc.

N. REPORT SUBMITTED BY: Leslie S. Clark
September 4, 1979

A. TITLE: OTTER LAKE CONSERVATION SCHOOL

B. DIRECTOR: Cy Johnson
Camp Union and the Otter
Lake Conservation Schools
Greenfield, NH 03047
603/547-3412

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE:
Year-around outdoor education groups/activities to observe

E. PRINCIPAL STAFF: 3 full time; 15 part time

CONSULTANT SERVICES UTILIZIED: None

F. HISTORY:

1) Principal originators:
   Boston YMC Union; Newton, Massachusetts Public Schools (Science Department); Director, Camp Union
2) Date and place of initiation:
   September, 1959
3) Funding sources utilized:
   Parent organization-The Boston Y.M.C. Union
4) Overall purpose:
   Help create an environmental awareness in elementary-age students

G. OBJECTIVES:

1) Create an environmental consciousness and awareness
2) Develop a sense of understanding and appreciation for the natural/life systems
3) Help create an awareness to change attitudes about the earth and its resources

H. MATERIALS:

1) Materials produced:
   Lesson plans for fifth through eighth grade students. Methods of teaching/learning emphasizing experiential learning
2) Free materials available:
   A cross-section of lesson areas, brochure and program description
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

We provide outdoor educational experiences and not material. Over 120 individual public and private schools attend our outdoor education programs each year.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (3 days)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Ours is a residential outdoor education program--providing teachers and experiences for elementary-age school students. Lesson areas include:

- Forest Community
- Soil Community
- Wetlands Community
- Forest and Resource Management
- Basic Life Needs
- Reading the Landscape
- Human/Resource Relationships
- Energy Transfers in the Natural World
- Food Production, Storage, Consumption
- Solar Heated Greenhouse Growing

M. PLANS FOR THE FUTURE:

Practical applications of the concepts we teach.

N. REPORT SUBMITTED BY: Cy Johnson
September 4, 1979

A. TITLE: HARRIS CENTER FOR CONSERVATION EDUCATION-SCHOOL PROGRAM

B. DIRECTOR: David Blair
Kings Highway
Hancock, NH 03449

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Agricultural skills

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED: No

F. HISTORY:

1) Principal originators:
   David Blair and Meade Cadot, Harris Center Director
2) Date and place of initiation:
   September, 1977; Hancock
3) Funding sources utilized:
   Harris Center funds; private contributions
4) Overall purpose:
   Environmental education in the Cantoocook Valley School District (K-8)

G. OBJECTIVES:

To provide environmental education in grades K-8 in local schools

H. MATERIALS:

1) Materials produced:
   A "packet" on school gardening and one on a school wheat project
2) Free materials available: Same as 1 above
3) Materials purchasable: None indicated
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: None indicated
2) Teachers adopting all of the materials: None indicated
3) Teachers using some of the materials: 20
4) Total students using all of the materials: None indicated
5) Totals stated are estimated.
6) Selected schools utilizing the program: See "L" below

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (2-3 hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

1) Nature, agriculture and survival skills lessons have been offered in eleven area schools at grades K-8.
2) Wheat and gardening projects have taken place at the Peterborough Elementary School (Peterborough, NH), the Greenfield School (Greenfield, NH), Francestown School (Francestown, NH), and the Hancock School (Hancock, NH)

M. PLANS FOR THE FUTURE:

We are expanding our program to include more rural skills.

N. REPORT SUBMITTED BY: David Blair
November 8, 1979

A. TITLE: ENVIRONMENTAL EDUCATION FOR TOMORROW'S NEEDS

B. DIRECTOR: Allie Quinn
Regional Center for Educational
Training (RCET)
45 Lyme Road
Hanover, NH 03755
603/643-5666

C. DESCRIPTORS: Environmental education

ADDITIONAL DESCRIPTORS: Futures education

D. HEADQUARTERS: Same as B

Note the organization is an educational service agency for nine school regions, including 84 elementary and secondary schools in New Hampshire and Vermont.

SPECIAL FACILITIES FOR VISITORS TO SEE:
Resource materials--especially loan "kits"

E. PRINCIPAL STAFF: 4

CONSULTANT SERVICES UTILIZED:
Extensive use of consultants, especially from Dartmouth College

F. HISTORY:

1) Principal originators:
   Allie Quinn, Project Director; Delmar Goodwin, Education Director, RCET
2) Date and place of initiation:
   Spring, 1977; RCET development of ESEA Title IV-C proposal to Vermont State Department of Education
3) Funding sources utilized:
   Title IV-C (Vermont), 3 years; Office of Environmental Education, U.S. Office of Education (HEW), 2 years; Science for Citizens Program, National Science Foundation, 1 year to cooperating agency, Montshire Museum of Science
4) Overall purpose:
   To stimulate and assist schools and their communities;
   To look seriously at the future--at society's future needs and at the skills, knowledge, and attitudes today's students will need to live effectively in their 21st Century adult lives

G. OBJECTIVES:

For communities:

1) To promote "future-oriented" dialogue/perspective and improved intercommunity cooperation among small towns of the region

For schools:

1) To involve appropriate participants, i.e., providers, users (including "community"), pragmatists, theoreticians
2) To define students "future-oriented" needs
3) To reassess the role of the school in meeting these needs
4) To design programs/processes for developing future-responsive, environmental curriculum materials (mostly by teacher participants)
5) To develop effective strategies to implement recommendations in local secondary schools

H. MATERIALS:

1) Materials produced:
   Materials are being developed by teacher participants who will be using them in their own classrooms. Secondary (6-12)--84 teaching "modules" on activities currently being pilot tested by their teacher-developers. General topics:
    1) Thinking About the Future
    2) Creative Problem Solving
    3) Systems Thinking
    4) Land Use
    5) Global Futures: population, food and technology
    6) Futurizing Your Classroom
    7) Teacher Training
   A "first draft" of these materials has been reproduced for use by project participants and State Department of Education (Vermont)
2) Free materials available: None indicated
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   See H.1 for materials in development
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 9
2) Teachers adopting all of the materials: None indicated
3) Teachers using some of the materials: 13
4) Total students using all of the materials: None indicated
5) Selected schools utilizing the program:

Hanover High School
(Attn: Frank Miles)
Hanover, NH 03755

Stevens Annex
(Attn: Lillian Scranton)
Claremont, NH 03743

Newton School
(Attn: David Webb)
South Stratford, VT 05070

Hartford High School
(Attn: Warren Foster)
White River Junction, VT 05001

J. TEACHER PREPARATION:

1) Consultative service available: Yes
   Once materials are pilot tested and evaluated, the project will provide consultation and teacher training--probably in 1980-81. Considerable training and assistance has been provided to teacher-developers.
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (1 offered through spring/fall conferences; 2 special offerings)
   Evening Classes (usually 30 or 45 hours/course)
   Note: Offerings vary from year to year according to need and advice of a teacher advisory group
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: Not yet together

K. MATERIALS EVALUATION: Internal; teachers and staff

L. SUMMARY OF ACTIVITIES TO DATE:

1) In 1978 this project initiated a multi-year program to develop curriculum concepts, change processes, and tested approaches for fostering future-oriented environmental education at the secondary level. Focusing on the suddenly changing world of the Upper Valley area of Vermont and New Hampshire, this year's effort sought to understand and define skills, knowledge and motivations people will need to live here effectively in the 21st Century. It projected what has been happening in the area, tried to get people to consider what they wanted their future to be like, and began to make them feel "empowered" to fulfill their visions--to make them become self-fulfilling prophecies.

2) Aided by some dramatic local events, the program achieved very high levels of involvement from key decision makers who suddenly became seriously interested in the area's future. Early activities got regional business, opinion, and governmental leaders together with educators to assess the area's changing needs and the school's appropriate role in meeting these needs. The future served well as an organizing principle. And the program and its sponsors achieved high visibility and some very real successes in stimulating educational providers, users, officials and communities to espouse and take over change processes.

3) The project developed three major thrusts. (1) A school-based effort stimulated "leadership teams" from eight school regions to define school-community needs and to formulate goals leading to specific action steps toward the desired future; (2) At the intercommunity level an "Inquiry into the Future of the Upper Valley" developed a surprising momentum on its own. In three phases it is defining challenges, getting community leaders to

decide the broad parameters of what they want to happen, and then defining how to make it happen. By January, 1980, this activity will create specific recommendations for inter-community cooperation in both the public and private spheres. Communities in both states are for the first time really investigating the similarity of their needs and how actions in one community can aid or adversely affect others; (3) A resource development effort compiled important background data and supported a number of school and community pilot experiences as resources for future activities. The program put together a preliminary regional data base from available published material. This will be used in year two to develop recommendations for a continuously updated, professionally managed, data base to support all future cooperative planning endeavors in the region.

4) This program is unique in several important respects. It focuses on knowledge, attitudes, and skills needed for the future, rather than those dictated by the present or the past. The program's location permits experimentation in a discrete universe of manageable scale, yet involves multiple school systems and communities in two separate states with differing political structures and traditions. A number of sophisticated communities, colleges, school systems, and public organizations have already become committed through earlier highly successful OEE programs and the first year's efforts. And an established regional, interstate public organization--the Regional Center for Educational Training--has become widely recognized for its coordination and management of the program.

5) In its second and third years the project enters critical phases in the translating of new awareness and goals into realistic strategies, operational guidelines and programs. This requires further attracting participants to achieve a critical mass of people and resources. Planning estimates suggest that by year three this will demand 500 active participants with up to 500 more peripherally involved to obtain significant change in this highly diverse 105,000 person region.

M. PLANS FOR THE FUTURE:

We assume the need for two or three more years to bring this project to fruition.

N. REPORT SUBMITTED BY: Allie Quinn
September 1, 1979

Previous Directory Reference: 1975

ERIC Document:

ED 099 228 A Manual For a Volunteer Field Aide Program

A. TITLE: SQUAM LAKES SCIENCE CENTER

B. DIRECTOR: Robert Nichols
Box 173
Holderness, NH 03245
603/968-7194

C. DESCRIPTORS: Conservation education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 5

CONSULTANT SERVICES UTILIZED:
Soil Conservation Service; Natural Science for Youth Foundation

F. HISTORY:

1) Principal originators:
   Interested citizens
2) Date and place of initiation:
   1968; Holderness, NH
3) Funding sources utilized:
   Memberships, admission fees, gifts
4) Overall purpose:
   To provide skills to make informed environmental decisions

G. OBJECTIVES:

To provide environmental awareness and knowledge

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--environmental units for grades 1-2, 3-4 and 5-6
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: Yes, 7-12
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 10
2) Teachers adopting all of the materials: 10
3) Teachers using some of the materials: 100
4) Total students using all of the materials: 18,000
5) Totals stated are definite.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (5 days and 1 day)
   Summer Institute (5 days)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE: None indicated

M. PLANS FOR THE FUTURE: None indicated

N. REPORT SUBMITTED BY: Robert Nichols
September 12, 1979

Previous Directory Reference: 1976

A. TITLE: BEAVER BROOK NATURAL SCIENCE TEACHER

B. DIRECTOR: No Director; contact:
Susan W. Marino
Education Committee Chairman
Beaver Brook Association
Box 34
Hollis, NH 03049
603/465-7620

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES FOR VISITORS TO SEE:
Self-guided trails, occasional programs for the public advertised through our newsletter

E. PRINCIPAL STAFF: Mixed-volunteer, part time and full time

CONSULTANT SERVICES UTILIZED: No

F. HISTORY:

1) Principal originators:
   Beaver Brook Association
2) Date and place of initiation:
   1974; Beaver Brook Association
3) Funding sources utilized:
   Private trust fund
4) Overall purpose:
   To broaden the training of boys and girls in matters pertaining to the understanding and appreciation of the ingredients of the natural world and their importance to the convenience and enjoyment of human life.

G. OBJECTIVES:

1) To develop natural science curriculum for readiness--sixth grade in Hollis and Brookline, New Hampshire, working with teachers, volunteers and students.
2) To provide a daily afterschool and summer program in the areas of crafts, nature studies and recreation.

H. MATERIALS:

1) Materials produced:
   Written materials were not produced until this year
2) Free materials available: None
3) Materials purchasable: "Beaver Brook Log" (our newsletter)
4) New instructional materials being developed: Yes, K-6
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: None indicated
2) Teachers adopting all of the materials: None indicated
3) Teachers using some of the materials: None indicated
4) Total students using all of the materials: None indicated
5) Totals stated are estimated/definite: Not indicated
6) Selected schools utilizing program materials:

Hollis Elementary School Hollis, NH	Brookline Elementary School Brookline, NH

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop; our natural science teacher works closely with the elementary school teachers, she is part of the staff at the two schools
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: Being acquired

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

In addition to providing the natural science teacher, the Beaver Brook Association has several trails and limited staff available to lead local groups coming in for educational purposes only. One of our primary purposes is to preserve the land and manage it for wildlife preservation and compatible forestry.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Susan W. Marino

November 28, 1979

A. TITLE: REGIONAL LAND USE CURRICULUM PROJECT

B. DIRECTOR: Howard Shapiro
Antioch/New England Graduate School
103 Roxbury Street
Keene, NH 03431
603/357-3122

C. DESCRIPTORS: Environmental education, natural resources

ADDITIONAL DESCRIPTORS: Land use

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 5

CONSULTANT SERVICES UTILIZED:
We are working with land use planners in the region and other resource people in developing the curriculum.

F. HISTORY:

1) Principal originators:
Antioch New England faculty members and teachers from six high schools in the region
2) Date and place of initiation:
April, 1979 (planning)
3) Funding sources utilized:
U.S. Office of Environmental Education
4) Overall purpose:
To develop a curriculum that will enable high school students to understand land use issues facing the tri-state region.

G. OBJECTIVES:

1) to design a curriculum of modular units for use in the second year and to pilot test segments of the curriculum
2) to train multidisciplinary teams of high school teachers to use the curriculum, and to understand the design process in order to encourage ongoing revisions and adaptations
3) to establish a regional network of high school and Antioch faculty that is skilled in working together across political and academic discipline boundaries in support of each other
4) to establish appropriate working relationships between the project and supporting organizations and individuals in the region
5) to establish all necessary support procedures within Antioch/New England for the implementation of the full curriculum in the schools during the second year
6) to establish a resource collection, centered at Antioch for use by teachers from participating schools, and to disseminate the curriculum beyond the initial participants

7) to evaluate the project
8) to implement curriculum modules designed in year one and evaluate their effectiveness
9) to build further the skills of the participating teachers and enlist additional teachers within participating schools
10) to prepare a final "Land Use Curriculum" kit for the tri-state region
11) to complete design on and begin implementation of efforts to carry the project to schools outside the participating districts

H. MATERIALS:

1) Materials produced:
   Secondary (7-12)--we are in the process of developing curriculum units on land use
2) Free materials available: None indicated
3) Materials purchasable: None
4) New instructional materials being developed: Yes
   7-12
5) Materials anticipated for development:
   A guide book for teachers to Pisgah State Park
6) Commercial association: None

I. IMPLEMENTATION:

Materials still being developed. We are working with 14 teachers from 7 schools in New Hampshire, Massachusetts and Vermont who will implement the curriculum.

J. TEACHER PREPARATION:

1) Consultative service available: Not indicated
2) In-service education program: Yes
   Teachers are working with us in developing the materials
3) Pre-service training program: No
4) Kinds of preparation programs:
   Teachers from 7 schools meeting throughout this year in developing the materials

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

1) Staff Development Activities--4 meetings (afternoon and evening) and one full weekend workshop of teachers and staff developing and testing land use activities toward building curriculum units
2) Curriculum Writing--Project staff writing up activities and creating units to be tested in schools of participating schools
3) Collection and evaluation of existing land use materials

M. PLANS FOR THE FUTURE:

Continuation of above with increased field testing of curriculum units.

N. REPORT SUBMITTED BY: Howard Shapiro
December 7, 1979

A. TITLE: ODIORNE POINT
VISITOR INTERPRETIVE CENTER

B. DIRECTOR: Julia Steed Mawson
University of New Hampshire Marine Program
c/o Office of Cooperative Ocean Programs
45-49 Pleasant Street
Portsmouth, NH 03801
603/431-5344

C. DESCRIPTORS: Environmental education, marine education, outdoor education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: Varies; internal, volunteers in spring and summer

CONSULTANT SERVICES UTILIZED:
Extensive use of community resources

F. HISTORY:

1) Principal originators:
   Audubon Society and New Hampshire Division of Parks; "Friends of Odiorne Point"-1973; in 1977 the University of New Hampshire became involved
2) Date and place of initiation:
   January, 1978; formal sponsorship by the above three organizations began
3) Funding sources utilized:
   Audubon Society of New Hampshire; New Hampshire Division of Parks; principal monies came from Sea Grant
4) Overall purpose:
   To provide a means for developing a more knowledgeable citizenry (and hence a more informed body of decision-makers)...concerning Odiorne Point and our coastal resources

G. OBJECTIVES

Provide broad range and scope of programs for a good cross-section of the community--including teachers and schools, University of New Hampshire students, most school groups, volunteers, etc.

H. MATERIALS:

1) Materials produced:
   Primary (K-9)--Through the Looking Glass Teachers Booklet
2) Free materials available:
   Participants may receive the booklet
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   Primarily for general public (trail guides)
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 40
2) Teachers adopting all of the materials: None indicated
3) Teachers using some of the materials: 100
4) Total students using all of the materials: Doesn't apply
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Little Harbor School Portsmouth, NH	Donderro School Portsmouth, NH
Parker Varney School Manchester, NH	Main Street School Exeter, NH

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (3 spring workshops, 3 hours each)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   University of New Hampshire Marine Program offers Sea Trek; the Marine Resource Center for Marine Education materials is currently being developed.

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

1) The Visitor Center at Odiorne Point is sponsored by the University of New Hampshire Marine Program, Audubon Society of New Hampshire and the New Hampshire Division of Parks. The Center is located on the water in Rye, New Hampshire, and offers programs and interpretive exhibits aimed at educating the public to the natural and social history of the state park, with special emphasis on the park's marine environments. Currently, the Center offers two series of programs, "Through the Looking Glass," a marine awareness program for schools offered in the spring, and "Summer By The Sea," 12 weeks of programs for special groups and the general public.

2) Though Odiorne Point is currently one of the major programs offered through the Marine Program, other education programs and services are available.

3) The Coastal Forum is a series of lectures, films and programs on topics and issues critical to New Hampshire's seacoast. Its intent is to be informational, not controversial, and seeks to bring to the public both sides of an issue. This program is geared primarily for an adult audience and is intended to provide lay people and community planners alike with a vehicle for

obtaining factual information which will impact their ability to make more informed decisions about their coastal zone.

4) SeaTrek is an outreach program designed to increase public awareness of the marine environment through slide shows, special programs and guided tours. The program is staffed by Marine Program personnel and University of New Hampshire Marine Docents. The main focus of this program is to bring aspects of the marine environment to schools, nursing homes and organizations that might not necessarily have an opportunity to visit the shore, as well as orienting and preparing prospective visitors (especially teachers and their students) for their visit before they leave their classrooms.

5) The Marine Docent Program is a volunteer recruitment and training program in which volunteers from the seacoast area are exposed to several weeks of intense training in various aspects of marine science, oceanography and marine education. These volunteers then provide a variety of educational services to the community through tours and programs via SeaTrek and other outreach activities.

6) The Floating Lab Program offers a special field experience in marine science for grades 6-12. During each 4-hour cruise, students and their teachers become "crew" members onboard a specially-equipped research vessel. Students then collect data on several biological and physical parameters at sampling stations located offshore. In addition to the actual cruises, the staff provides teachers with introductory material and a pre-trip workshop.

7) The University of New Hampshire Marine Speakers Bureau is a public lecture service offered to the community and general public on various marine subjects. The program is staffed by Marine Program faculty members and staff and is designed to acquaint audiences with current marine issues. Topics include submersible vehicles, the law of the sea, underwater acoustics, aquaculture and an overview of the Marine Program, to name a few.

M. PLANS FOR THE FUTURE:

1) Evaluation development
2) Program development for high schools
3) Mini-courses for adults

N. REPORT SUBMITTED BY: Julia Steed Mawson
Marine Education Specialist/
Director of the Nature Center
November 28, 1979

A. TITLE: BREWSTER-WINNIPESAUKEE PROJECT

B. DIRECTOR: Kenneth D. Kimball
Brewster Academy
Wolfeboro, NH 03894
603/569-1600

C. DESCRIPTORS: Conservation education, environmental education, natural resources, population education, urban environmental education

ADDITIONAL DESCRIPTORS: freshwater education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Research lab, 28-foot research boat

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED: No

F. HISTORY:

1) Principal originators:
   Steve McLoy, Kenneth D. Kimball
2) Date and place of initiation:
   1975; Brewster Academy
3) Funding sources utilized:
   ESEA Title IV grant; Geraldine Dodge Foundation grant
4) Overall purpose:
   Student education in environmental problem solving; conduct student research projects which provide baseline data to local governmental agencies

G. OBJECTIVES:

The objective of the project is to conduct student research projects which provide local governmental agencies and citizen groups with baseline data, which they might otherwise not be able to afford. Incorporated in this objective is to provide the student with a realistic learning experience.

H. MATERIALS:

1) Materials produced:
   Secondary (7-12)--teacher guides
   a. individual projects: 1) Fish Population Study; 2) Water Quality Study; 3) Land-Use Study
   b. resource materials list and synopsis of how to get a research project started
2) Free materials available: See 1 above
3) Materials purchasable: None indicated

4) New instructional materials being developed:
   Yes, grades 10-12
5) Materials anticipated for development:
   Teacher guides for individual projects in land-planning
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 0
2) Teachers adopting all of the materials: 0
3) Teachers using all of the materials: 3
4) Total students using all of the materials: 100
5) Totals stated are definite.
6) Selected schools utilizing program materials:

Nashua High School Nashua, NH	Kingswood Regional High School Wolfeboro, NH
Alton High School Alton, NH	

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes (local)
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1 day)
   Evening Classes (can be arranged)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   teachers guide (see H.1)

K. MATERIALS EVALUATION:

1) Evaluator:
   Dr. Corcoran, University of New Hampshire, Department of Education, Durham, NH
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

The project emphasis has been to conduct baseline data gathering studies for local governmental and citizen groups. Studies completed include:

1) Back-Bay Water Quality Study, Wolfeboro Conservation Commission, 1977
2) Wetlands Inventory, Wolfeboro Conservation Commission, 1978
3) Lake Wentworth Water Quality Study, Lake Wentworth Association, 1979
4) Pout Pond Water Quality Study, Pout Pond Association, 1978
5) Rust Pond Water Quality Study, Rust Pond Association, 1976
6) Upper Beech Pond Water Quality Study, Upper Beech Pond Association, 1976

7) Fish Population Study, New Hampshire Fish and Game Department, 1976-present.

These projects by the students have been well received, and several of the student reports have been praised by state agencies. Numerous donations to the project have been received in appreciation of the work accomplished by the above listed agencies.

M. PLANS FOR THE FUTURE:

1) Continuation of ongoing projects
2) Development of more student "community research projects"

N. REPORT SUBMITTED BY: Kenneth D. Kimball
September 4, 1979

A. TITLE: PROJECT EASE (ENERGY AND SOLAR EDUCATION)

B. DIRECTOR: David W. Kinmond
Superintendent of Schools Office
Box 669
47 Pleasant Street
Wolfeboro, NH 03894
603/569-2821

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Resource room

E. PRINCIPAL STAFF: 7

CONSULTANT SERVICES UTILIZED:
Teacher workshops and curriculum development

F. HISTORY:

1) Principal originators:
David Kinmond, Science Department Chairperson; David Johnston, Curriculum Coordinator, Junior-Senior High Science Teacher
2) Date and place of initiation:
School year 1976-77; Kingswood Regional Junior-Senior High School, Wolfeboro, New Hampshire
3) Funding sources utilized:
ESEA Title IV-C
4) Overall purpose:
To develop curriculum materials and an implementation process for an energy education program for students in public and private schools in grades K-12.

G. OBJECTIVES:

See L below.

H. MATERIALS:

1) Materials produced:
Primary (K-6)--approximately 100 infusable energy activities for use in math, science and social studies.
Secondary (7-12)--approximately 130 infusable and unit energy activities for use in math, science, social studies, industrial arts and home economics.
2) Free materials available: None
3) Materials purchasable: None

4) New instructional materials being developed:
   Secondary 7-12
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION

1) Schools using entire set of materials: 6
2) Teachers adopting all of the materials: 0
3) Teachers using some of the materials: 110
4) Total students using all of the materials: 2,000
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Kingswood Regional Junior-Senior High School
South Main Street
Wolfeboro, NH 03894

Ossipee Central School
Ossipee, NH 03814

Moultonboro Central School
Moultonboro, NH

Carpenter Elementary School
Wolfeboro, NH 03894

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1-2 hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION:

1) Evaluator:
   RMC Research, Portsmouth, NH 03801; 1 year
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

The Governor Wentworth Regional School District project is an ESEA Title IV-C model program supported by local and federal funds. The project is a three-year model grant whose goal is to develop curriculum materials and an implementation process for an energy education program for students in the public and private schools in grades K-12. The basis for this program is the Preliminary Energy Education Program Outline developed during Project EASE's planning year grant (1977-78). The energy activities will be infused into existing curriculum in the areas of math, science, social studies, and IA/vocational education. During the three-year grant period the following objectives will be addressed:

1) Project EASE students will acquire and apply energy concepts in a) energy sources, uses, impacts and limits; b) energy conservation; and c) alternative energy sources.

2) The development of infusable energy activity packets with necessary background information sheets which will be provided to teachers K-12.

3) Teachers will attend Project EASE training sessions in order to learn to use energy activity packets, to gain background information, to become familiar with resource material and teaching techniques in energy education.

4) Schools, other than those in GWRSD, will pilot energy activities to determine the exportability of Project EASE materials.

Project EASE will also provide workshops and establish a resource center for adults dealing with energy conservation in the home and alternative energy sources. Project EASE will attempt to determine if the workshops and the use of the resource center will lower fuel consumption and/or make use of alternative sources of energy.

A full-time director and several part-time support team personnel will staff the project during the three years.

Goal I

To develop curriculum materials and an implementation process for an energy education program for students in public and private schools in grades K-12.

1978-79 Objective I

By June 15, 1979, students in grades 4-6 and 10-12 who are in classrooms implementing Project EASE will demonstrate statistically significant greater growth in acquisition and application of energy concepts when compared with control groups of similar students not involved in Project EASE.

1979-80

By June 15, 1980, students in grades K-12 who are in classrooms implementing Project EASE will demonstrate statistically significant greater growth in acquisition and application of energy concepts when compared with control groups of similar students not involved in Project EASE.

Evaluation Statement

A) A pre/post (September/June) evaluation instrument that measures conceptual knowledge, skill application, and attitudes in these areas: 1) energy sources, uses, impacts and limits; 2) energy conservation; and 3) alternative energy sources will be administered to all students. Students exposed to Project EASE activities will show a statistically significant greater growth (using raw scores) than students not involved in Project EASE activities based on analysis of test scores.

B) Teacher activity records, classroom observations, and feedback forms will be used to show effectiveness of teacher training sessions.

Activities

1) Prepare and administer pre/post evaluation instrument.

2) Conduct an item analysis to determine in which areas additional activities are needed.

3) Continue to establish an energy education materials resource center for use by all district personnel.

4) Students in grades K-12 will be exposed to energy activity packets developed under Objective 2 and infused into math, science, social studies, and industrial arts/vocational classes.

5) Students will collect and analyze data using purchased equipment (ex. Megatech power units) and their own constructed models (solar panels, etc.).

6) Prepare and present to teachers training sessions dealing with use of energy activity packets, background information, and instructional techniques.

7) Teachers will keep records of: 1) energy activities used, 2) pre/post data for each activity, and 3) evaluations of activity by both student and teacher.

8) Future teacher training activities will be planned based on analysis of evaluation instruments (pre/posttest, teacher feedback forms).

9) Students will be exposed to outside resource personnel (extension people, alternative energy experts).

1978-79 Objective II

By June 30, 1979, seven (7) packets of energy activities with necessary background information and an evaluation sheet for use by teachers in grades 4-6 and 10-12 will be developed based on the district's Preliminary Energy Education Program Outline developed during planning year (1977-78). Activities will be developed that may be infused into existing curriculum in the areas of: math, science, social studies and industrial arts/vocational.

1979-80

By June 30, 1980, twelve (12) packets of energy activities with necessary background information and an evaluation sheet for use by teachers in grades K-12 will be developed based on the district's Preliminary Energy Education Program Outline (developed during planning year 1977-78). Activities will be developed that may be infused into existing curriculum in the areas of: math, science, social studies and practical arts vocational education.

Evaluation Statement

Twelve (12) packets of energy activities will be available for use by teachers in grades K-12, in the areas of: math, science, social studies, practical arts/vocational education. Activity evaluation sheets will be available and will be used to revise activities.

Activities

1) An activity writing session involving about fifteen (15) individuals will be held during the summer of 1979. Activities will be developed for:

    a) Grades K-12 in the above mentioned areas.
    b) Activities previously developed for grades 4-6 and 9-12 will be revised based on teachers evaluations.

2) An activity evaluation sheet and background materials will be developed for each activity.

3) A scope and sequence will be developed for the energy education program in grades K-12.

4) Project EASE staff will research and suggest various teaching techniques for presenting energy activities.

M. PLANS FOR THE FUTURE:

Dissemination to other schools through Title IV.

N. REPORT SUBMITTED BY: David Kinmond
September 6, 1979

A. TITLE: CONSERVATION AND ENVIRONMENTAL STUDIES CENTER, INC.

B. DIRECTOR: Dr. V. Eugene Vivian
Box 7596
RD 7
Browns Mills, NJ 08015
609/893-9151

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, outdoor education, urban environmental education.

D. HEADQUARTERS: Same as B.

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: None

E. PRINCIPAL STAFF: 15

CONSULTANT SERVICES UTILIZED: None

F. HISTORY:

1) Principal originators:
   Dr. V. Eugene Vivian
2) Date and place of initiation:
   1966, Browns Mills, NJ.
3) Funding sources utilized:
   None indicated
4) Overall purpose:
   Environmental Education K-12 with emphasis on hands-on experience. Outdoor Resident Environmental Education Programs.

G. OBJECTIVES:

Hands-on environmental education lessons for all age groups.

H. MATERIALS:

1) Materials produced:
   See brochure available from C.E.S.C.I.
2) Free materials available: None.
3) Materials purchasable: Sourcebook for Environmental Education
4) New instructional materials being developed:
   K-12.
5) Materials anticipated for development:
   Energy curriculum, solid waste curriculum.
6) Commercial association:
   Yes, details not indicated.

I. IMPLEMENTATION:

1) Schools using entire set of materials: 40
2) Teachers adopting all of the materials: 180
3) Teachers using some of the materials: 70
4) Total students using all of the materials: 10,000
5) Totals stated are definite.
6) Selected schools where the program materials are being used:

Cinnaminson School Systems
Cinnaminson, NJ

Bayville School System
Bayville, NJ

Vineland School Systems
Vineland, NJ

Haddonfield School System
Haddonfield, NJ

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshops (4 hours to 3 days)
    Summer Institute
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
    See brochure. Commercially available through C.E.S.C. Inc.

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

See brochure.

M. PLANS FOR THE FUTURE:

Research, impact statements.

N. REPORT SUBMITTED BY: George E. Young
Environmental Planner
September 9, 1979

Previous Directory References: 1972, 1973, 1975

ERIC Documents:

ED 033 784	Local Education Agency Guidebook for Resident Environmental Education Programs
ED 033 787	Observation Skills - Tuning Up the Five Senses
ED 033 788	Teacher's Workshop Handbook for Resident Programs
ED 079 103	Sourcebook for Environmental Education

A. TITLE: ENERGY OCCUPATIONAL OUTLOOK

B. DIRECTOR: Dr. Louis A. Iozzi
Center for Coastal & Environmental Studies
Rutgers - The State University
Doolittle Hall
New Brunswick, NJ 08903
201/932-2246

C. DESCRIPTORS: Energy education, natural resources

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED: None

F. HISTORY:

1) Principal originators:
   Dr. Louis A. Iozzi
2) Date and place of initiation:
   October 1, 1978; Rutgers-The State University
3) Funding sources utilized:
   State Department of Education, Division of Vocational Education and Career Preparation, Bureau of Occupational and Career Research Development
4) Overall purpose:
   To provide an overview of career opportunities in energy-related fields and a framework for preparation for an energy-related career.

G. OBJECTIVES:

1) Job requirements and the nature, problems and opportunities available.
2) The interrelationship existing among school subjects, careers and life goals.
3) Career options which reflect their interests, abilities and skills.
4) Work attitudes necessary for career success.

H. MATERIALS:

1) Materials produced:
   Secondary (7-12)--Energy Occupations Handbook
2) Free materials available: None
3) Materials purchasable:
   Energy Occupations Handbook, Center for Coastal and Environmental Studies (price available)
4) New instructional materials being developed: None
5) Materials anticipated for development:
   Energy Occupations Curriculum Units
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 0
2) Teachers adopting all of the materials: 0
3) Teachers using some of the materials: 0
4) Total students using all of the materials: 0
5) Totals stated are definite (not distributed yet).

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The Energy Occupations Project was funded for one year by the New Jersey State Department of Education, Division of Vocational Education and Career Preparation. The project conducted energy occupational research to develop data for publication of the Energy Occupations Handbook. This handbook provides an overview of career opportunities in energy-related fields and a framework for preparation for an energy-related career. The handbook was designed for use by secondary school students. The projects provided funds for initial printing of a limited number of handbooks. These are available for review from the Center for Coastal and Environmental Studies at Rutgers University. Funding is being sought for a major printing and in-class review of the handbook.

M. PLANS FOR THE FUTURE:

Funding is being sought for additional printing and dissemination of the handbook in New Jersey. Follow-up projects, if funded, will develop Energy Occupations Curriculum Units.

N. REPORT SUBMITTED BY: Dr. Louis A. Iozzi
November 29, 1979

A. TITLE: INSTITUTE FOR SCIENCE, TECHNOLOGY, SOCIAL SCIENCE EDUCATION

B. DIRECTOR: Dr. Louis A. Iozzi
The Institute for Science, Technology,
Social Science Education
Rutgers - The State University
New Brunswick, NJ 08903
201/932-2246

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, urban environmental education.

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
14 curriculum modules

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED:
Several consultants whose expertise corresponded to particular curricular subject areas contributed to the development of the materials.

F. HISTORY:

1) Principal originators:
   Louis A. Iozzi, Director; Janey M.Y. Cheu, Associate Director
2) Date and place of initiation:
   1976; The Institute for Science, Technology, Social Science, Rutgers-The State University
3) Funding sources utilized:
   ESEA Title IV-C
4) Overall purpose:
   The project endeavors to provide interesting and useful experiences which will result in improved decision-making and critical thinking skills and ethical reasoning ability in junior and senior high school students. The materials focus on the issues that interface science, technology and society.

G. OBJECTIVES:

1) To increase student knowledge on issues that interface science, technology and society.
2) To increase student's decision-making and critical thinking skills.
3) To promote the development of moral/ethical reasoning ability.
4) To promote the development of logical reasoning ability.

H. MATERIALS:

1) Materials produced:
   Secondary (7-12)--Coastal Decisions: Difficult Choices
   Energy: Decisions for Today and Tomorrow
   Future Scenarios in Communications
   Space Encounters
   Technology and Changing Life-Styles
   Food: A Necessary Resource
   Perspectives on Transportation
   Future N.J.: Public Issues and the Quality of Life
   People and Environmental Changes
   Environmental Dilemmas: Critical Decisions for Society
   Of Animals, Nature and Man
   Beacon City: An Urban Land-Use Simulation
   Dilemmas in Bioethics
   Technology and Society: A Futuristic Perspective
2) Free materials available:
   Descriptive brochure
3) Materials purchasable:
   The above mentioned curriculum materials are in the final stages of editing and printing and will be available for commercial distribution within the next several months.
4) New instructional materials being developed: None indicated
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION

1) Schools using entire set of materials: 4
2) Teachers adopting all of the materials: None indicated
3) Teachers using some of the materials: 9
4) Total students using all of the materials: 810
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Hamilton High East (Steinert)
2900 Klockner Road
Trenton, NJ 08690

Union Avenue Middle School
427 Union Avenue
Irvington, NJ 07111

Red Bank Catholic High School
10 Peters Place
Red Bank, NJ 07701

St. Mary's High School
351 Mechanic Street
Perth Amboy, NJ 08861

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (3 days)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: Yes

K. MATERIALS EVALUATION:

1) Evaluator:
   New Jersey Department of Education. The materials were field-tested by 25 school districts, 53 teachers, and approximately 6,000-7,000 students.
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

The Institute for Science, Technology and Social Science Education is a Title IV-C curriculum development project for grades 7-12. The 14 interdisciplinary curriculum modules, which comprise this new curriculum series--Preparing for Tomorrow's World--and are the central focus of the project, are based on the Socio-Scientific Reasoning Model (a curriculum model developed by project personnel). This model synthesizes and applies the theories of Jean Piaget, Lawrence Kohlberg and others to the examination of critical issues at the interfaces of science, technology and society. The curriculum materials based on these theories were utilized in approximately 34 public and non-public schools in New Jersey. The materials are in the process of final editing; printing of all modules is expected to be completed over the next few months.

M. PLANS FOR THE FUTURE: None indicated

N. REPORT SUBMITTED BY: Nancy Brzezinski
Administrative Assistant
November 21, 1979

ERIC Documents:

ED 173 075	The Socio-Scientific Reasoning Model: Past, Present, and Future
ED 173 076	The Socio-Scientific Reasoning Model: Instruments for Evaluation
ED 173 077	An Evaluation of Curriculum Materials Based upon the Socio-Scientific Reasoning Model
ED 173 078	The Coastal Zone. Man and Nature. An Application of the Socio-Scientific Reasoning Model

A. TITLE: CAMP HOPE FIELD LEARNING CENTER

B. EXECUTIVE DIRECTOR: Eugene J. Madden
Camp Hope, Union Valley Road
West Milford, NJ 07480
201/728-8166

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
-Nature Resource Center
-Orienteering Trail
-Survival Trail
-Low Land Forest Trail
-Confidence Rope Course
-Geology Walk Through Time
-New Games

E. PRINCIPAL STAFF: 10

CONSULTANT SERVICES UTILIZED: None

F. HISTORY:

1) Principal originators:
Eugene J. Madden; James P. Brady
2) Date and place of initiation:
August, 1977
3) Funding sources utilized:
Passaic County; Passaic County/CETA
4) Overall purpose:
To provide an environmental education experience for individuals of Passaic County.

G. OBJECTIVES:

1) Provide a field site structural to complement school curricula.
2) Establish training facilities for educators.
3) Institute programs geared to foster sound ecological awareness for the residents of Passaic County.
4) Compile a teachers manual and curricula guide.
5) Publish a Community Resource Survey Guide that lists all county environmental agencies.

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--The following lesson plans for all levels:
   1. Forest, Community and Plant Succession
   2. Micro-ecosystems and Habitats
   3. Low Land Forest
   4. Orienteering
   5. Survival
   6. Aquatic Ecology
   7. Hydrology
   8. Meteorology
   9. "Geological Walk Through Time"
   10. Outdoor Photography
   11. Natural History
   12. Environmental Consciousness
   13. Action Socialization Experiences
   14. Environmental Land Usage

   Other--Passaic County Environmental Agencies Directory, 1978
2) Free materials available:
   Those listed above
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 0
2) Teachers adopting all of the materials: 0
3) Teachers using some of the materials: 50
4) Total students using all of the materials: 0
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

"High Academic Achievers Program"
Cassie Lewis, Director
40 West Milford Board of Education
West Milford, NJ

Lakeside School "Exceptional Child Program"
Laura Kirk, Director
Pomptom Lakes, NJ

Science Department
Vicki Madden, Chairperson
Eastside High School
Park Avenue
Paterson, NJ

Wayne Board of Education
Roger Hawkins, Environmental Education Specialist
30 Nellis Drive
Wayne, NJ

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (2-1/2 day--weekends--and 1 day)
   Evening Classes (in conjunction with graduate credits offered at workshops)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Lesson plans are for content areas listed in H-1.

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Camp Hope has developed a unique environmental program for the residents of Passaic County students, educators and interested groups enjoy a resource center, lesson plans, curricula guides and a professional staff to foster a sound ecological awareness. These services are available in the local school settings and at the camps resident facilities. The camp field learning center offers three nature trails, a confidence course, and a nature center to accent the experiential activities and lessons. Educators are also invited to attend seasonal teacher training workshops where lesson plans and curricula guides are presented and developed to meet the particular needs of each age group or grade level.

M. PLANS FOR THE FUTURE:

Future plans include the development of a winter residential environmental education program.

N. REPORT SUBMITTED BY: James P. Brady
Assistant Director
September, 1979

A. TITLE: ALBUQUERQUE PUBLIC SCHOOLS
ENVIRONMENTAL EDUCATION CENTER

B. DIRECTOR: John B. Cox
P.O. Box 25704
Albuquerque, NM 87125
(505) 842-3662

C. DESCRIPTORS: Environmental education, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Five miles of trail, ecology and natural history exhibits, wind generator and solar heating.

E. PRINCIPAL STAFF: 4

CONSULTANT SERVICES UTILIZED:
Hired consultant to write and plan the original project proposal and others to assist.

F. HISTORY:

1) Principal originators:
Charles Rentro; O. C. Graves
2) Date and place of initiation:
February 7, 1967
3) Funding sources utilized:
ESEA Title III, 1967-71; Albuquerque Public Schools Board of Education-100%, 1971-1979
4) Overall purpose:
To provide direct, firsthand learning experiences that develop knowledges and attitudes of man's relationship, interdependence and responsibility to his natural surroundings and life support systems.

G. OBJECTIVES:

Students, through inter-sensory integration, and exploration, will recognize:

1) That patterns of size, shape, angles, arcs, distances and groupings within their immediate surroundings create and maintain events.
2) That the amount of available energy and materials sets limitations to the growth patterns of a community, organism or system.
3) Through contrast-comparison between an urban and forest community, that structure to function relationships of recycling, energy transfers and errors in traffic patterns of collection and distribution determine the long-term survival of any community, organism or system.

4) And translate all data into visual and spatial reality, recognizing that spatial errors create misconceptions, misjudgments, misuse and malfunctions, as well as having environmental consequences.

H. MATERIALS:

1) Materials produced:
   Primary (K-6)
   1. Teacher's guide
   2. Student orientation filmstrip
   3. Follow-up filmstrip, Man, Nature and Trash
   4. Teacher's resource guide to "Albuquerque's Environmental Story"
   5. Staff instructional format (concepts taught and activities used to teach concept)
   6. Suggested follow-up activities
   7. Many materials and films on our residential camping program

   Secondary (7-12)--#4 above
2) Free materials available:
   Teacher's guide; staff instructional format; suggested follow-up activities
3) Materials purchasable: None
4) New instructional materials being developed: None indicated
5) Materials anticipated for development:
   See L which follows
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 74
2) Teachers adopting all of the materials: 240
3) Teachers using some of the materials: 50
4) Total students using all of the materials: 7,200
5) Totals stated are definite.
6) Selected schools utilizing program materials:

John Baker Elementary
12015 Tivoli Street, NE
Albuquerque, NM 87112

Larrazolo Elementary
2008 Larrazolo Street, SW
Albuquerque, NM 87105

Cochiti Elementary
3100 San Isidro Road, NW
Albuquerque, NM 87107

Bandelier Elementary
3309 Pershing, SE
Albuquerque, NM 87105

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: None indicated
4) Kinds of preparation programs: None indicated

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

Since 1967, Albuquerque Public Schools has provided an Environmental Education program for elementary students at its 130-acre outdoor Environmental Education Center Campus in the Sandia Mountains, and has conducted a summer residential camping program for fourth, fifth and sixth grade students at its Jemez Mountain site near Fenton Lake since 1954.

Environmental Education Center

The Environmental Education Center's program is designed to provide environmental activities for 225 fifth grade and 16 fourth/fifth combination classrooms from 74 schools. The program of instructional activities is divided into three phases:

1. A preplanning classroom phase which consists of a slide/tape presentation that prepares students for the trip to the Center, a suggested series of exploratory walks each class can take on the school grounds and neighborhood, and a recent copy of the National Wildlife Foundation's Environmental Quality Index that explains the current status of our natural resources.

2. A field trip phase to the Environmental Education Center to study, via direct observation, the patterns and cycles of a forest community which is contrasted and compared to the patterns and cycles of a man-made community by means of an ecology museum located at the Center.

3. And, a follow-up classroom phase which specifically focuses on Albuquerque's waste disposal problems by viewing a filmstrip/tape presentation entitled "Man, Nature and Trash." Each class is also provided with another filmstrip/tape presentation on the role parks play in an urban environment, plus a suggested list of activity problems for continued study. In addition, teachers will use the recently published teaching resource guide, "Albuquerque's Environmental Story," to infuse environmental problem solving activities into their total curriculum. Inservice workshops on how to use this guide will be initiated during the next two years for all teachers from kindergarten to twelfth grade.

After 11 years of trial and error in conducting outdoor and indoor teaching/learning techniques, the Environmental Education staff has discovered a new, untried approach to teaching students how to visually discover and interpret basic spatial alignment patterns that universally create and determine the functional causality of all earthly elements. This new technique will be field tested and given careful evaluation this spring.

Summer Camp

The Albuquerque Public Schools Summer Camp program is organized to provide a 4-day camping, environmental education and recreation agenda of activities for 500 to 600 fourth, fifth and sixth grade students in a student-centered camp setting during the months of June and July. Students pay a fee for their food and transportation, and APS furnishes the supervision and instructional components of the program.

A camp staff of 12 organizes and directs the food service and a wide variety of instructional activities, such as: field trips to the nearby fish hatchery and geothermal well, nature arts and crafts, fly-tying, fishing on stream and lake, backpacking, survival, compass, night and day discovery hikes, forest and stream exploration, recreational games, campfire programs, astronomy, O.B.I.S. investigations, environmental education awareness games, and camp conservation projects.

This camp is a "rough it" type of experience. Students sleep in tents, and the entire camp operates without the aid of electricity. A typical day starts around 7:00 a.m. and concludes with flashlights and lanterns out at 10:00 p.m. In addition, this is perhaps the first stay-away-from-home adventure that most of these students have experienced.

The major thrust of this camping experience is not only to learn how to use and enjoy a mountain environment, but to develop a sense of responsibility in preserving and conserving its natural heritage for the pleasure of future generations.

M. PLANS FOR THE FUTURE:

Continuation of present activities.

N. REPORT SUBMITTED BY: John B. Cox
November 7, 1979

Previous Directory Reference: 1973

ERIC Documents:

ED 017 445 Outdoor Education Center, Planning Project Report

ED 027 983 Teacher's Guide to Outdoor Education

ED 170 118 Albuquerque's Environmental Story

A. TITLE: PROJECT BELAY (BROADENING EXPERIENCE IN LIFE FOR AZTEC YOUTH)

B. DIRECTOR: John Feeley
Aztec High School
500 E. Chuska
Aztec, NM 87410
505/334-9414

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Cultural journalism (tri-lingual, student produced periodical called I.C.E.-Inter Cultural Experience)

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Mobile classrooms; hiking boots

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED:
Yes, in building in cultural journalism component, outdoor leadership (National Outdoor Leadership School), and a construction component, as well as local resources for interviews.

F. HISTORY:

1) Principal originators:
   Outward Bound; HOLS; FOXFIRE; and various local projects nationwide
2) Date and place of initiation:
   February 1, 1979
3) Funding sources utilized:
   ESEA Title IV-C
4) Overall purpose:
   To involve students who were "turned-off" by traditional methods in meaningful experiential education.

G. OBJECTIVES:

1) To engage disaffected students in school activities (i.e., magazine, videotapes, trips, etc.)
2) To motivate increased attendance
3) To develop environmental concern
4) To broaden each student's repetoire of experience

H. MATERIALS:

1) Materials produced:
   Secondary (7-12)--Pre/post academic test, project magazine (in production), videotapes
2) Free materials available:
   Course outlines--English (cultural journalism), social studies (local history) and science (environmental education)
3) Materials purchasable:
   Magazine (ICE), May 30, 1979
4) New instructional materials being developed:
   Presently 8-12
5) Materials anticipated for development:
   Curriculum guide, teams and ropes course
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 0
2) Teachers adopting all of the materials: 0
3) Teachers using some of the materials: 0
4) Total students using all of the materials: 68
5) Totals stated are definite.

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshops (4 weekend trips per year)

K. MATERIALS EVALUATION:

1) Evaluator:
   Southwest Research Associates (SWRA)
2) Pertinent published research on evaluation:
   Southwest Research Associates; Title IV-C ESEA evaluations (78-79)
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

Students have been involved in various wilderness trips, have attended many workshops, sponsored service projects, had guest speakers, etc. Each student has kept a running log and journal of these activities, and this year we plan to formalize their writing in a published magazine. The main ingredients have been visitors to the classroom, visits throughout the community, responsibility and pride in accomplishments.

Student leaders participate in an intensive leadership program. The students attended and conducted panels at the National Cultural Journalism workshop, participated in an intensive outdoor leadership course, are responsible for planning "outdoor" staff training weekends in which they are the teacher/leaders and district teachers are the pupils, take and certify in advanced first aid and culminate the year training program by attending a cross-cultural course at North Carolina Outward Bound or a wilderness course at National Outdoor Leadership School. All leaders lead trips. Graduates are hired back.

M. PLANS FOR THE FUTURE:

1) Building in construction and stronger video components (building our own school)
2) Expanding to elementary level
3) More (in district) teacher and parent workshops

N. REPORT SUBMITTED BY: John J. Feeley
August 31, 1979

A. TITLE: CARLSBAD CAVERNS ENVIRONMENTAL EDUCATION PROGRAM

B. PROGRAM COORDINATOR: Mr. Mark G. Struble
3225 National Parks Highway
Carlsbad, NM 88220
505/785-2233

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, urban environmental education

ADDITIONAL DESCRIPTORS: Environmental Study Area at Rattlesnake Springs

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 4

CONSULTANT SERVICES UTILIZED:
National Park Service training; U.S. Forest Service workshops and materials

F. HISTORY:

1) Principal originators:
Richard Wilt, Chief of Visitor Services and Interpretation
2) Date and place of initiation:
August, 1978
3) Funding sources utilized:
Park Service funds supplemented with money from the Carlsbad Caverns National History Association
4) Overall purpose:
To create a more environmentally knowledgeable and concerned public in Southwestern New Mexico by using "hands on" activities, projects, outings, etc.

G. OBJECTIVES:

1) A clear understanding that man is an inseparable part of a system consisting of man, culture and the bio-physical environment, and that man has the ability to alter the interrelationships of this system.
2) A broad understanding of the bio-physical environment, both natural and man-made, and its role in contemporary society.
3) A fundamental understanding of the bio-physical environmental problems confronting man, how these problems can be solved, and the responsibility of citizens and government to work toward their solution.
4) Attitudes of concern for the quality of the bio-physical environment which will motivate citizens to participate in bio-physical environmental problem solving.

H. MATERIALS:

1) Materials produced: None
2) Free materials available: None indicated
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   Yes, about 3-6
5) Materials anticipated for development:
   Environmental Study Area guide
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: None
2) Teachers adopting all of the materials: None
3) Teachers using some of the materials: None
4) Total students using all of the materials: None
5) Totals are estimated.
6) Selected schools utilizing program materials:

Pate School Carlsbad, NM 88220	Riverside Elementary Carlsbad, NM 88220

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (1 afternoon)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The environmental education program here has been under way for about one year. In that time we have tried to involve our ideas and materials with the area schools. This has included class visits, outings to the park's Environmental Study Area, and covering a wide range of environmental topics. This year we hope to involve a great number of schools in many different course areas (history and environmental concerns of the Carlsbad area). Our staff is small and limited, but we would welcome the chance to spread some of our ideas to others starting out in environmental education.

M. PLANS FOR THE FUTURE:

Involve all grades (K-12) in energy awareness, greater environmental study, web of life, etc.

N. REPORT SUBMITTED BY: Mark Struble
September 11, 1979

A. TITLE: SOLAR ENERGY EDUCATION PROJECT

B. DIRECTOR: Thomas Boehm
Bureau of Science Education
State Education Department
Albany, NY 12234
518/474-7746

C. DESCRIPTORS: Energy education

ADDITIONAL DESCRIPTORS: Solar energy education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Teachers in various regions are using solar-related materials in their classrooms.

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
Consultants have been used as writers, editors and graphic artists.

F. HISTORY:

1) Principal originators:
Thomas Boehm, Director; Dale Westcott, Coordinator, Science Department Chairman, Guilderland Middle School; Volker Mohnen, Consultant, Director Atmospheric Sciences Research Center, SUNY-Albany; Edward Lalor, Douglas Reynolds, John Favitta, Advisors, Bureau of Science Education, New York State Education Department
2) Date and place of initiation:
June, 1977
3) Funding sources utilized:
U.S. Department of Energy
4) Overall purpose:
To prepare solar energy curriculum materials for use in grades 7-12.

G. OBJECTIVES:

1) Provide students with the latest information and technology on solar energy.
2) Provide classroom teachers with the background and instructional materials necessary to transmit this information to their students.

H. MATERIALS:

1) Materials produced:
Secondary (7-12)--Teachers guide, reader, text; activities: junior high biology, earth science, chemistry and physics, general solar topics
2) Free materials available:
The solar energy curriculum is available free to schools willing to pilot test selected activities
3) Materials purchasable:
Curriculum is available through the Government Printing Office, Washington, DC 20402. Included are:

#061-000-00228-6	Activities: Junior High Science	$2.75
#061-000-00229-4	Activities: Chemistry & Biology	2.20
#061-000-00230-8	Activities: Biology	1.70
#061-000-00231-6	Activities: General Solar Topics	2.50
#061-000-00232-4	Activities: Earth Science	2.75
#061-000-00233-2	Solar Energy Text	2.75
#061-000-00234-1	Solar Energy Teacher's Guide	2.20
#061-000-00235-9	Solar Energy Reader	2.75

Note: Teachers who agree to participate in pilot test will receive a complimentary set of materials.

4) New instructional materials being developed:
Yes, grades 7-12
5) Materials anticipated for development:
Currently planning the development of solar-related curriculum materials for other curriculum areas which include industrial arts, home economics, social sciences and humanities
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 50-75
2) Teachers adopting all of the materials: 125
3) Teachers using some of the materials: None indicated
4) Total students using some of the materials: 1000-1200
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Carol Burkhart
St. Johnsville Central School
St. Johnsville, NY

James Klausen
Miller Place High School
Miller Place, NY

Bruce Tulloch
Parker Collegiate Institute
170 Joralemon Street
Brooklyn, NY 11201

Kay Balmer
Pittsford High School
Pittsford, NY

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program:
   This activity is currently being planned with the regional solar centers located in Portland, Oregon; Atlanta, Georgia; Cambridge, Massachusetts; and Eagan, Minnesota
4) Kinds of preparation programs:
   Other--The type of workshop which will be offered is currently being developed with the regional solar centers mentioned above.
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Teacher's Guide; Solar Energy Project Overview; Demonstration Hardware

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The Solar Energy Education Project, sponsored by the U.S. Department of Energy commenced in June, 1977 with a one-week intensive training session of 81 science teachers in solar energy technology which was held at the University at Albany. Classroom activities were developed by these teachers who then pilot tested the material and revised as necessary. Two feedback sessions were held during the following year and the activities were exchanged and further refined. The result is 43 classroom activities arranged in four subject areas and a general solar category in addition to the "support materials" (text, reader and teacher's guide). Beginning in September, 1978 the material was released for pilot testing on the national level involving approximately 80 schools in 25 states. The national pilot test and revision is to continue through the coming year. Plans are under way for the development of solar-related activities into other curriculum areas.

M. PLANS FOR THE FUTURE:

1) To develop solar-related activities for other curriculum areas.
2) To develop an adult education awareness type program on solar energy concepts.

N. REPORT SUBMITTED BY: Thomas Boehm
September 26, 1979

ERIC Documents:

ED 173 158 Solar Energy Project: Teacher's Guide

ED 173 159 Solar Energy Project: Junior High Science Activities

ED 173 160 Solar Energy Project: Earth Science Activities

ED 173 161 Solar Energy Project: Biology Activities

ED 173 162	Solar Energy Project: Chemistry and Physics Activities
ED 173 163	Solar Energy Project: Activities on General Solar Topics
ED 173 164	Solar Energy Project: Text
ED 173 165	Solar Energy Project: Reader

A. TITLE: ENVIRONMENTAL SCIENCE GRADE 9

B. DIRECTOR: Alan Ascher
South Shore High School
6565 Flatlands Avenue
Brooklyn, NY 11236
212/531-4454

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, population education, urban environmental education.

D. HEADQUARTERS: Same as B.

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
We have displays of various ecosystems that are maintained by our students.

E. PRINCIPAL STAFF: 4-6

CONSULTANT SERVICES UTILIZED:
Dr. Harold McKenna of the Environmental Education program at City College was involved in the formulation of the program. He was chiefly involved in an NSF training program for teachers. He has continued to offer us advice on the programs development.

F. HISTORY:

1) Principal originators:
   Alan Ascher, Michael Haas and Denise DiRienzo-Skalecky.
2) Date and place of initiation:
   South Shore High School, September, 1974.
3) Funding sources utilized:
   The Board of Education of New York City, Science Unit and Division of Curriculum Development funded a curriculum writing project. An NDEA grant for $17,000 was received for the purchase of equipment.
4) Overall purpose:
   We have developed a course in Environmental Science for use in the 9th grade. The development of the curriculum was made with the intention of the possibility of adopting the course on a citywide basis. We have been using the program at the school for the past 6 years.

G. OBJECTIVES:

To conceptualize using both physical and mathematical models.
To develop an understanding of the need for keeping records in the form of observation, graphs and numerical data.
To increase the power of pupil observation for field and lab activities.
To increase the appreciation, concern and care for living things found in nature.
To develop an understanding of natural resources and their conservation.
To increase environmental awareness, knowledge and sensitivity.
To develop attitudes and understandings concerning the interrelationships within the ecosystem and the fragile nature of the living environment.
To involve students in meaningful projects concerning environmental issues in the local community.
To make students aware of the career and vocational opportunities in the environmental field.
To make students aware of the need to protect their local environment using the appropriate laws established for this purpose.

H. MATERIALS:

1) Materials produced: None listed.
2) Free materials available:
   Individual activities such as field studies, labs, reports.
3) Materials purchasable: None listed.
4) New instructional materials being developed: None at this time.
5) Materials anticipated for development: None listed.
6) Commercial association: None.

I. IMPLEMENTATION:

1) Schools using entire set of materials: 4+
2) Teachers adopting all of the materials: Unknown
3) Teachers using some of the materials: Unknown
4) Total students using all of the materials: Unknown
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Campus High School - City College
Convent Avenue
New York, NY 10017

IS 303
501 West Avenue
Brooklyn, NY 11224

New Dorp High School
Clawson Street
Staten Island, NY 10306

Edward R. Murrow High School
1500 Avenue L
Brooklyn, NY 11230

J. TEACHER PREPARATION:

1) Consultative service available: Yes, to a minimum.
2) In-service education program:
   A one session workshop is planned for a half day this spring.
3) Pre-service training program: None.
4) Kinds of preparation programs:
   Workshop (4 hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None.

K. MATERIALS EVALUATION: None.

L. SUMMARY OF ACTIVITIES TO DATE:

Our project has involved several hundred students each year studying environmental science instead of the traditional general science. The staff was selected by the Board of Education to complete a curriculum guide on the subject of Environmental Science. This publication was made available, in an experimental edition, this fall (1979). Many schools are examining the material for use as a full year course. Some schools are opting to infuse portions of the curriculum into existing programs.

The course of study was designed to integrate all of the areas of science into the study of the environment. At the ninth year level we are able to have all of our students participate in this vital area of study. (At a higher level only the most interested are attracted and competition with traditional sciences is greater). Basic ecology, urban ecology, population issues, pollution, energy, and technology and environmental analysis.

M. PLANS FOR THE FUTURE:

Field guides, cross-age teaching programs for advanced students.

N. REPORT SUBMITTED BY: Alan Ascher
Coordinator

ERIC Document:

ED 182 110 Environmental Science, Grade 9. Experimental Curriculum Bulletin

A. TITLE: SCIENCE ACTIVITIES VIA ENVIRONMENTAL STUDIES (SAVES)

B. DIRECTOR: David J. Goldberg, Assistant Principal
Halsey Junior High School 296
125 Covert Street
Brooklyn, NY 11207
212/574-0288

C. DESCRIPTORS: Energy education, environmental education, marine education, urban environmental education

ADDITIONAL DESCRIPTORS: Atmospheric environment

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 5

CONSULTANT SERVICES UTILIZED: None

F. HISTORY:

1) Principal originators:
   David J. Goldberg, Assistant Principal; Linda Faucetta, Teacher
2) Date and place of initiation:
   September, 1975; Botany
   September, 1977; Marine environment
   September, 1979; Atmospheric environment
3) Funding sources utilized:
   All projects were funded initially by Title IV-C Mini-grants; New York City tax-levied funds; contributions
4) Overall purpose:
   To provide our children with appropriate science experiences using the environment as the strand that ties them together.

G. OBJECTIVES:

Grade 7

1) To provide practice and experience in the safe use of basic tools used in agronomy and related occupations.
2) To discover, develop and direct desirable individual interests, aptitudes and abilities.
3) To assist in developing and practicing desirable social attitudes and relationships within the family, the school, and the community.
4) To introduce methods for obtaining related information on careers.
5) To develop in pupils an awareness and appreciation of those who serve the world of work.
6) To provide broad experience and study of plant reproduction and its relationship to human reproductions.

Grade 8

By the end of the project year the following percentages of students in the program will meet the stated objectives:

1) 90 percent will identify cloud types as precursors of specific weather conditions.
2) 90 percent will accurately use a geiger counter to determine background radiation.
3) 90 percent will prepare and identify atmospheric gases in the laboratory.
4) 75 percent will be able to identify biological and industrial pollutants in sampled air.
5) 95 percent will be able to determine relative humidity, temperature, wind speed and direction and barometric pressure using the appropriate apparatus.
6) 80 percent will understand windchill and THI factors.
7) 80 percent will accurately chart existing weather conditions.
8) 75 percent will predict weather from data supplied by other reporting stations.
9) 85 percent will recognize the effects of weathering on their community.
10) 95 percent will offer viable solutions to the energy problems in their homes.
11) 85 percent will understand the physiological responses of other organisms (plants and animals) to atmospheric changes.
12) 95 percent will learn to dress appropriately for changing weather conditions.
13) 50 percent will effectively operate the videocamera and videotape recorder.
14) 30 percent will participate in the city-wide science fair and SEER exposition.

Grade 9

It is expected that at the end of the program the following percentages of students will:

Cognitive

1) 90 percent of the participants will be able to establish balanced aquaria
2) 90 percent will be able to determine the pH of an aquatic environment
3) 90 percent will see the relationship of the sea to our national development
4) 80 percent will be able to identify organisms indigeneous of our waters
5) 75 percent will understand the relationship of erosional action on land and sea
6) 75 percent will understand the effect of pressure and depth on aquatic life
7) 75 percent will understand the effect of thermal variations on aquatic life

8) 80 percent will understand the need to preserve aquatic species in our environment
9) 80 percent will observe the various breeding patterns of aquatic organisms

Affective

1) 90 percent will understand the role of the sea as a means of career opportunity
2) 75 percent will appreciate the necessity of controlling the active pollution of the sea
3) Many pupils will be aware of special high school marine science programs

H. MATERIALS:

1) Materials produced:
   No materials have been produced. This project is a curriculum development project. Our purpose is to utilize existing materials into a comprehensive science program.
2) Free materials available:
   We will distribute copies of our curriculum (source guide included) to anyone who requests it on official stationery.
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development:
   Student Laboratory Guides (1980)
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 1
2) Teachers adopting all of the materials: 5
3) Teachers using some of the materials:
4) Total students using all of the materials: 750
5) Totals stated are definite.

J. TEACHER PREPARATION:

1) Consultative service available: None indicated
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop

K. MATERIALS EVALUATION:

1) Evaluator:
   Companies supplying them
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

SAVES is a three-year program of integrated sciences at J296K (District 32-Bushwick). It was funded through the NYSED Mini-grant program as three separate projects during a four-year period (1975-1978).

The programs were developed as a result of the expressed need to motivate the children in the sciences and to develop an awareness of and possible solutions to environmental problems.

The funding provided the necessary equipment, supplies and non-personnel services to the school. Through the use of tax levy and NYSTL funds, the school has been able to supplement the laboratories and activities with texts, audio-visual and programmed materials.

Student abilities range from SP classes through classes receiving reading and mathematics remedial services.

At present the three programs (Ecology-Land Environment, Air-Our Atmospheric Environment and Marine Environment) are offered to only four classes on each grade level. All programs are subject to review and modification as the programs evolve.

Grade 7 Ecology

The ecological succession of the pond is studied in depth. Through the life functions, students explore the interrelationships among organisms, and the chemical and physical processes that maintain life. The evolution of land forms from original rock through sedimentary, metamorphic and related soil types are examined.

Grade 8 Air

The obvious daily changes in our atmospheric environment are examined. Students build their own instruments and learn the mechanics involved. The effects, both physical and chemical, of the atmosphere on life and matter are investigated. Weather forecasting and climatology are included.

Energy, its forms, conversion, waste, conservation and alternatives complete the year's program.

Grade 9 Marine Environment

The aquaria, laboratory and media center provide the environment for investigations in our marine program. Students see the interrelationships of the sciences by studying the biomes. The sciences are explored via realia collected and extensive audio-visual materials as well as traditional laboratory exercises.

The children study the culture of the sea through the history, art and writing which involve it. They participate in the political activities of Greenpeace and The Fin Alliance.

Extensive field trips in and around New York give them first-hand experiences with intertidal biomes, the harbor and pollution of our waters.

M. PLANS FOR THE FUTURE:

We are planning to have lesson plans and activity summaries duplicated for distribution.

N. REPORT SUBMITTED BY: David J. Goldberg
September 24, 1979

A. TITLE: ENVIRONMENTAL STUDIES (FULL YEAR COURSE FOR JUNIORS/SENIORS)

B. DIRECTOR: William Legg, Science Supervisor
Liverpool High School
Wetzel Road
Liverpool, NY 13088
315/652-1122

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education (field trip activities), population education, urban environmental education

ADDITIONAL DESCRIPTORS: Environmental careers, consumer "environomics," government, politics and environment, transportation

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
Coordinator of Environmental Education, New York State Education Department

F. HISTORY:

1) Principal originators:
   Barry Jamason, Coordinator for Environmental Education, State Education Department; 4 curriculum writers including myself
2) Date and place of initiation:
   September, 1978; Liverpool High School
3) Funding sources utilized:
   Regular district funds
4) Overall purpose:
   Instill an awareness in students of environmental concepts and concerns; inculcate in the students an appropriate change in attitudes toward their environment.

G. OBJECTIVES:

With regard to Environmental Studies 1, the student will be able to:

1) Survey environmental problems at the local, national and international levels.
2) Understand the characteristics of natural systems and environments through the identification of basic environmental concepts.
3) Investigate the implications of population size and rates of growth in terms of environmental impact.
4) Investigate the effects of air, water, land, and noise pollution and evaluate the economic, social, and aesthetic impact of various forms of pollution.

5) Study the impact of effluents, pesticides and radiation upon the health of the human organism.
6) Survey and observe environmentally-related occupations, professions and avocations

With regard to Environmental Studies 2, the student will be able to:

1) Consider public and private attitudes and policy toward one of our most important resources, land, and explore legislation, zoning laws, and agency activities pertaining to land use.
2) Consider the nature and status of resources throughout the world including the current scarcity of some of the imminent depletion of others and discuss these resources in terms of a system of equitable management, apportionment, and use.
3) Examine human life and its interdependence with the natural environment, especially in terms of food supplies.
4) Observe and analyze the impact of consumer trends, preferences, and lifestyles upon the human and natural environments.
5) Understand the interplay of government and politics with the environment through research into legislation, zoning laws, environmental law, political trade-offs, and advocacy positions.
6) Learn about the intrinsic, essential properties and characteristics of energy and its use in natural and human systems and also review its forms, resources, and conservation.
7) Outline the development and role of transportation in industrial America while considering its impact in social and environmental terms.
8) Discuss the present in terms of the future and then discuss the future in terms of the present.

H. MATERIALS:

1) Materials produced:
   Other (10-12)--An Environmental Syllabus—Grades 10-12
2) Free materials available:
   Syllabus
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development:
   Course Teacher's Manual--comprising all teaching materials, supportive devices, etc.
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 1
2) Teachers adopting all of the materials: 2
3) Teachers using some of the materials: 3
4) Total students using all of the materials: 200/year
5) Totals stated are definite.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Syllabus--Environmental Studies 1

Unit	Weeks
1) The Environmental Status Quo	1
2) Natural Environments	6
3) Population Dynamics	4
4) Pollution	6
5) Environmental Health	1
6) Environmental Careers and Course Summary	2
	20

Syllabus--Environmental Studies 2

Unit	Weeks
1) Land Use and Management	4
2) Global Resource Management	2
3) World Geography and Hunger	2
4) Consumer Environomics	2
5) Government, Politics and the Environment	3
6) Energy, Parts I/II	4
7) Transportation	2
8) Course Summary and the Environmental Future	1
	20

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: William N. Legg
October 31, 1979

Previous Directory Reference: 1973

ERIC Document:

ED 085 244 Environmental Education Program, Grades K-8

A. TITLE: INTERDISCIPLINARY OCEANOGRAPHY

B. DIRECTOR: Mr. Maxwell "Mickey" Cohen
Beach Channel High School
Rockaway Park, NY 11694
212/945-6900

C. DESCRIPTORS: Conservation education, environmental education, marine education, natural resources, urban environmental education

ADDITIONAL DESCRIPTORS: Marine biology, geological oceanography, chemical oceanography, physical oceanography, navigation, sailing

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Tour of special facilities including laboratories and oceanography museum

E. PRINCIPAL STAFF: 25

CONSULTANT SERVICES UTILIZED:
Consultants from other cities and school districts were contacted/visited during school design phase and during the program development phase.

F. HISTORY:

1) Principal originators:
   Mr. Maxwell Cohen; Mr. David Kraus
2) Date and place of initiation:
   1968; Far Rockaway High School
3) Funding sources utilized:
   New York City Board of Education; Federal Vocational Education Program
4) Overall purpose:
   To make use of the unique marine environment of Beach Channel High School as a motivating device for learning in all subject areas and to encourage career aspirations in ocean-related fields

G. OBJECTIVES:

To incorporate oceanographic (and freshwater) concepts in all subject areas.

H. MATERIALS:

1) Materials produced:
    - Secondary (7-12)--Curriculum Manual (three volumes): "Interdisciplinary Oceanography for High Schools." Temporarily out of print.
    - Other--Curriculum Manual (two volumes): "Marine Biology for High Schools." Temporarily out of print.
2) Free materials available: None indicated
3) Materials purchasable:
    - Manuals listed above will be available for distribution again next year.
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 1
2) Teachers adopting all of the materials: hundreds
3) Teachers using some of the materials: hundreds
4) Total students using all of the materials: 3,000
5) Totals stated are definite.
6) Selected schools utilizing program materials:

John Dewey High School
Brooklyn, NY

South Shore High School
Brooklyn, NY

Sheepshead Bay High School
Brooklyn, NY

Edward R. Murrow High School
Brooklyn, NY

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    - Workshop (one session)
    - Summer Institute (two 3-week sessions)
    - Evening Classes (several 30-hour courses)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Beach Channel High School, because of its unique location on the shore of Jamaica Bay in Rockaway Park, New York, has developed an innovative program in INTERDISCIPLINARY OCEANOGRAPHY whereby every one of its 3,000 students is introduced to ocean-related concepts in every subject area taught at the school. The project goals are enhanced by the inclusion of sophisticated special facilities which were incorporated into the school design by Maxwell Cohen, the innovator of the project. These include a launching ramp for small boats, a wooden pier, a salt water intake system to supply running salt water to hundreds of display tanks and work tanks, centralized compressed air for fish tanks, and a pool for SCUBA instruction. Students residing in any part of New York City are eligible for enrollment at Beach Channel High School regardless of traditional zoning regulations.

M. PLANS FOR THE FUTURE:

1) A formalized career education program.
2) A formalized Institute of Oceanography catering to the special needs of students entering the school from outside of the traditional zoned area.

N. REPORT SUBMITTED BY: Maxwell "Mickey" Cohen
November 1, 1979

A. TITLE: PROJECT ZOO: ZOO OPPORTUNITIES OUTREACH

B. DIRECTOR: Sue Spencer
Randolph County Schools
2301-B Enterprise Street
Asheboro, NC 27203
919/629-6380

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Zoo education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
Over 90 classroom teachers, plus approximately ten specialists in science and curriculum, and professional zoo personnel have assisted in project development. An artist has assisted in graphics.

F. HISTORY:

1) Principal originators:
   Edith Briles, Randolph County Director of Instructional Media, originated the idea, wrote and submitted a proposal to ESEA, Title IV-C, for funding
2) Date and place of initiation:
   May, 1977 (funded); July, 1977 (implemented)
3) Funding sources utilized:
   Elementary and Secondary Education Act, Title IV-C
4) Overall purpose:
   To develop a program of instructional materials for K-6 students which utilizes the zoo as an educational resource

G. OBJECTIVES:

1) To provide an instructional program for K-6 children of Randolph County (and North Carolina) which will utilize the resources and facilities of the North Carolina Zoological Park.
2) To provide a model for curriculum development and staff development of (K-6) teachers in the Randolph County Schools.
3) To ensure that the Randolph County Community is knowledgeable and accepting of the zoo project and its involvement with the total school program.

H. MATERIALS:

1) Materials produced:
   Too numerous to list
2) Free materials available: Not indicated
3) Materials purchasable:
   A brochure and price list describing available materials will be sent on request
4) New instructional materials being developed:
   Yes, K-6
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 17
2) Teachers adopting all of the materials: 95
3) Teachers using some of the materials: 200
4) Total students using all of the materials: 3,000
5) Totals stated are estimated (#3)/definite (#1,#2,#4).
6) Selected schools utilizing program materials:

Seagrove School
Drawer B
Seagrove, NC 27341

Trindale School
Archdale Branch
High Point, NC 27263

New Market School
Box 189
Sophia, NC 27350

Braxton Craven School
P.O. Box 250
Trinity, NC 27370

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (6 hours)
   Summer Institute (25 hours)
   Evening Classes (20 hours)

K. MATERIALS EVALUATION:

1) Evaluator:
   Dr. Paul B. Hounshell
2) Pertinent published research on evaluation:
   Project Zoo: 1978-79, Final Evaluation Report
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

Since its origin, Project ZOO professional staff members have worked closely with zoo personnel, classroom teachers, and specialists in science, curriculum, and school administration, to develop ideas and materials which enhance the study of and visits to the zoo. The North Carolina State Zoo is located in Randolph County, so the cooperative project between school and zoo was a natural one. With over 60,000 students in school groups visiting the zoo yearly, a need for pre- and post-visit materials did exist.

It was desirable that any materials developed be based on ideas of practicing classroom teachers and field-tested in actual classrooms. A pilot team of K-6 teachers were given release time to create materials to be used in their classrooms. These materials were used and tested by these teachers and approximately 70 other teachers. Their suggestions were incorporated in appropriate revisions. In addition, various consultants in zoology, science education, and curriculum have critiqued the materials.

Project ZOO materials are multi-level and multi-disciplinary. A variety of learning styles are incorporated in order to help reach every child.

Basic concepts of animal studies are the foundation of Project ZOO units. Teachers may correlate these units with science studies already in use. A visit to the zoo may or may not be included in the study.

Three units have been developed for grades K-3: Characteristics of Animals, Behavior of Animals, Homes and Habitats of Animals. Grades 4-6 may study Classification of Animals, Adaptations of Animals, and Interdependence. For each unit a kit of materials is available which contains a teacher resource book, student booklets, worksheets, games, study prints, flash cards, supplemental materials, and a sound-slide program. A criterion-reference test was given as a pre- and post-test to experimental and control classes.

Testing of materials is now nearing completion. Dissemination of our program across North Carolina will be our next effort.

M. PLANS FOR THE FUTURE:

1) During the coming months we will complete production and testing of all materials.
2) In the spring (1980) awareness sessions throughout the state will make others aware of our project and materials will be used in various areas of the state.
3) In the spring of 1980, also, we plan to begin procedures to accomplish state, and eventually national, validation in order to demonstrate and disseminate our project goals and procedures to other school systems.

N. REPORT SUBMITTED BY: Sue Spencer
November 15, 1979

A. TITLE: ENERGY CONSERVATION EDUCATION PROGRAM
GUILFORD COUNTY SCHOOL SYSTEM

B. DIRECTORS: Michael D. Priddy and Mary Kearns
120 Franklin Boulevard
P.O. Drawer B-2
Greensboro, NC 27402
919/272-0191

C. DESCRIPTORS: Conservation education, energy education, environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: Not indicated

CONSULTANT SERVICES UTILIZED:
North Carolina Department of Commerce--Jan Fitzgerald, Chris Mogensen; North Carolina Department of Public Instruction--Paul Taylor, Ann Watkins; Duke Power Educational Services--Steve Canipe

F. HISTORY:

1) Principal originators:
   Michael Priddy, Director of Secondary Education; Mary Kearns, Science Supervisor
2) Date and place of initiation:
   December 1, 1977; Guilford County School System Central Office
3) Funding sources utilized:
   Federal funds--Department of Commerce, Energy Division; local funds
4) Overall purpose:
   To design and implement a program of inservice on Energy Conservation Education and to develop and produce an interdisciplinary guide for Energy Conservation Education, grades K-12

G. OBJECTIVES:

1) Orientation of principals, teachers, and other staff members in the Guilford County Schools to the proposed inservice training program on energy conservation education.
2) Assessment of the curriculum in each of the 42 schools in the Guilford County School System to determine to what extent energy conservation is being taught at each grade level and in each subject area.
3) Preparation of a curriculum guide for a K-12 interdisciplinary Energy Conservation Education Program in the Guilford County Schools.

4) Presentation and dissemination of the curriculum guide for Energy Conservation Education to educators in the Guilford County School System and the identification of strategies for integrating materials and resources on energy conservation into existing programs.

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--Energy Conservation Education Resource Guide, K-12
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed:
   Individual teachers are developing their own department or grade level units within various schools
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 42
2) Teachers adopting all of the materials: None indicated
3) Teachers using some of the materials: 1,300
4) Total students using all of the materials: 26,000
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Southeast Junior High School
Route 4, Box 428
4825 Wood, Mill Road
Greensboro, NC 27406

Eastern High School
Route 2
Box 148-E
Gibsonville, NC 27249

Pleasant Garden Elementary
P.O. Box 338
Pleasant Garden, NC 27313

Laughlin Primary School
Route 3, Box 51
Summerfield, NC 27358

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (2-4 hours)
   Summer Institute (30 hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Copy of the Guide

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

1) Steering committee selected and coordinator chosen.
2) One representative from each school attended orientation session (one-half day).
3) Each school is surveyed to determine what is being done and what needs are.
4) Representatives meet to compile assessments and formulate plans (1 day).
5) Workshop participants chosen.
6) Workshop conducted in which a guide is written for Energy Conservation Education, an interdisciplinary approach for grades K-12.
7) Guide was edited, printed and disseminated to the schools in the system.
8) One representative in each school conducted a 2-4 hour workshop to acquaint the faculty with the Guide.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Mary Kearns
August 4, 1979

ERIC Document:

ED 165 988 Energy Conservation Education Resource Guide

A. TITLE: DARE COUNTY MARINE EDUCATION PROJECT

B. DIRECTOR: Dr. Carolyn Hampton
North Carolina Marine Resources Center
P.O. Box 967
Manteo, NC 27954
919/473-2288

C. DESCRIPTORS: Conservation education, environmental education, marine education, natural resources

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Office is located in the North Carolina Marine Resources Center which has a public aquarium gallery and marine and coastal exhibits

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED:
Suggestions and curriculum materials requested from marine education projects across the country.

F. HISTORY:

1) Principal originators:
   Dr. Les Picker; Rhett White
2) Date and place of initiation:
   August, 1979; Manteo, North Carolina
3) Funding sources utilized:
   ESEA Title IV-C: University of North Carolina College Sea Grant Program
4) Overall purpose:
   To develop a multidisciplinary, activity-oriented marine education program modeled in Dare County Public Schools with emphasis on curriculum adaptability for infusion throughout the North Carolina school system.

G. OBJECTIVES:

1) To develop K-12 multidisciplinary, activity-oriented marine education curriculum materials.
2) To provide teachers and facilitators with the knowledge, attitudes and skills to infuse marine topics into the classroom.
3) To develop marine career information and decision-making materials.
4) To implement a marine information retrieval system for teachers.

H. MATERIALS:

1) Materials produced: None
2) Free materials available: None indicated
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   Yes, K-12
5) Materials anticipated for development:
   -K-12 multidisciplinary, activity-oriented marine education, curriculum materials
   -Marine career information and decision-making materials
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 0
2) Teachers adopting all of the materials: 0
3) Teachers using some of the materials: 0
4) Total students using all of the materials: 0
5) Totals stated are estimated/definite: Not indicated

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (not yet determined)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

We are in the planning stage which includes: developing methodology and evaluation procedures and gathering resources for curriculum development.

M. PLANS FOR THE FUTURE: None indicated

N. REPORT SUBMITTED BY: Laurie E. Usher
Project Developer
September 11, 1979

A. TITLE: SIXTH-GRADE ENERGY MODULE

B. DIRECTOR: Evelyn W. Taylor, High School Supervisor
Catawba County Schools
P.O. Box 1000, North Main Street
Newton, NC 28658
704/464-8333

C. DESCRIPTORS: Conservation education, energy education, environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Instructional module on energy for sixth graders

E. PRINCIPAL STAFF: 0
On salary--2 supervisors and 3 classroom teachers work with project in addition to regular responsibilities

CONSULTANT SERVICES UTILIZED:
Dr. Lloyd Barrow--Elementary science education specialist, Lenoir-Rhyne College, conducted 10-hour workshop with committee developing instructional kit on methodology and materials appropriate for sixth-grade student.

F. HISTORY:

1) Principal originators:
High school supervisor and four high school physics and environmental teachers planned initial approach and suggested grade level. High school supervisor wrote the project. Committee formed to develop project consisted of 3 high school science teachers and 2 sixth-grade teachers (one with concentration in science, the other in social studies).
2) Date and place of initiation:
February, 1978; Catawba County Schools Administrative Offices
3) Funding sources utilized:
Energy Conservation and Production Act (P.L. 94-385)--$1,998.00 to develop and pilot original module
4) Overall purpose:
To affect a positive attitudinal change in the sixth-grade student toward the use of energy by increasing his/her awareness of the energy problem and the need for wise use of energy.

G. OBJECTIVES:

To develop one sixth-grade energy module which can be used effectively by teachers and students and serve as a model for constructing two replicas. The three instructional modules will be housed centrally and circulated to schools throughout the system.

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--One teacher's guide and some of the energy games contained in module
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 11
2) Teachers adopting all of the materials: 35
3) Teachers using some of the materials: 5
4) Total students using all of the materials: 1,000
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

St. Stephens Elementary
Route 9, Box 2
Hickory, NC 28601

Mountain View Elementary School
Route 1, Box 67
Hickory, NC 28601

Sherrills Ford Elementary
Sherrills Ford, NC 28673

C. H. Tuttle Middle School
Route 1, Box 38
Maiden, NC 28650

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (3 hours first year; 1-1/2 hours second year)
   Other--project director and committee members are available for follow-up consultation with classroom teachers as needed. Feedback indicates that guide and materials are complete enough that teachers need little, if any, assistance.

K. MATERIALS EVALUATION:

1) Evaluator:
   Dr. Lloyd Barrow
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

1) Energy Project Committee developed one module summer of 1978
2) Module was piloted in four sixth-grade classes (3 schools) following "trial" in class of sixth-grade science teacher on committee. In-service was conducted for these pilot teachers prior to use of module
3) Using feedback from teachers and students, the module was revised during summer of 1979 and two additional modules (replicas) were developed, utilizing local funds to have a total of three modules available for circulation to all sixth-grade teachers in the school system
4) In-service was conducted for all sixth-grade science teachers in August, 1979--workshop included participation of teachers in activities contained in module, how to use module, and how to obtain it from County Media Center

M. PLANS FOR THE FUTURE:

1) In-service for new sixth-grade teachers as they enter school system
2) Continued use of module with sixth-grade students
3) Revision, replacement of components as needed

N. REPORT SUBMITTED BY: Evelyn W. Taylor
September 14, 1979

A. TITLE: BERTHOLD PUBLIC SCHOOL ARBORETUM

B. DIRECTOR: Richard Debertin
Berthold Public School District 54
Berthold, ND 58718
701/453-7484

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Horticulture (nursery)

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 1 part time

CONSULTANT SERVICES UTILIZED: Yes

F. HISTORY:

1) Principal originators:
   Richard Debertin; Tom Hove
2) Date and place of initiation:
   1973
3) Funding sources utilized:
   ESEA Title III and IV-C; State Board of Vocational Education; local education agency
4) Overall purpose:
   Provide an outdoor study area for science and vocational agriculture classes

G. OBJECTIVES:

Contribute toward environmental education, vocational agriculture and science

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--Elementary Teachers Guide
   Secondary (7-12)--Plant Science Curriculum Book; filmstrips horticultural nursery plant identification
2) Free materials available: None indicated
3) Materials purchasable:
   Filmstrips Horticultural Nursery Plant Identification--set of three, $45; Plant Science Curriculum Book, $3
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 1
2) Teachers adopting all of the materials: 2
3) Teachers using some of the materials: 15-20
4) Total students using all of the materials: 200
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Berthold Public School
Berthold, ND

Carrington High School
Vocational Agriculture Department
Carrington, ND

Westhope High School
Vocational Agriculture Department
Westhope, ND

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE: None indicated

M. PLANS FOR THE FUTURE:

Limited because of lack of funding.

N. REPORT SUBMITTED BY: Richard Debertin

November 27, 1979

A. TITLE: BEXLEY JUNIOR HIGH SCHOOL CAMP—
TAR HOLLOW STATE PARK

B. DIRECTOR: Doug Ehrman
Bexley Junior High School
250 South Cassingham Road
Bexley, OH 43209
614/237-4266

C. DESCRIPTORS: Environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Yearly camp-in session Tar Hollow State Park first two weeks in May

E. PRINCIPAL STAFF: 6

CONSULTANT SERVICES UTILIZED:
Department of Education environmental education seminars; State Department of Natural Resources field information on local geological examples (stages pond)

F. HISTORY:

1) Principal originators:
   Antoinette Lowery
2) Date and place of initiation:
   1953; Camp Mary Orion
3) Funding sources utilized:
   Bexley Board of Education
4) Overall purpose:
   Learn, study, experience the environment firsthand

G. OBJECTIVES:

1) Enrichment of regular school curriculum
2) Develop an increased understanding and appreciation of nature
3) Learn to live, plan, work and share in the responsibilities of group living

H. MATERIALS:

1) Materials produced:
   Secondary (7-12)--Field study sheet; post trail worksheets
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed:
   Yes, seventh grade
5) Materials anticipated for development:
   Appropriate field guides
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 1
2) Teachers adopting all of the materials: 6
3) Teachers using some of the materials: 6
4) Total students using all of the materials: 180/year
5) Totals stated are definite.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs: None

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

The environmental camping experience began as a class project in 1953 and has grown through the cooperation of the staff into a full grade participation. The emphasis of the activities has ranged from plant and animal identification to a present comprehensive study of field, forest, lake, stream, including a culminative creative writing experience for a three-day, hands-on experience. For each of the study areas we are in an unending process of creating field trail guides, field worksheets and post field activities.

M. PLANS FOR THE FUTURE:

Reevaluate the program, update trail guides, create post field worksheets, search for future campsites, purchase books and appropriate supplies.

N. REPORT SUBMITTED BY: Clarence P. Berg
Staff Member
October 10, 1979

A. TITLE: GRANT NATURE CENTER

B. DIRECTOR: Ed Kramer
401 Normandy Ridge Road
Centerville, OH 45459
513/433-2809

C. DESCRIPTORS: Conservation education, environmental education, outdoor education

D. HEADQUARTERS: Same as b

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Classroom-Presentation room, lab and activity facility

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED: No

F. HISTORY:

1) Principal originators:
   Centerville City Schools; Centerville-Washington Park District
2) Date and place of initiation:
   1965; Centerville
3) Funding sources utilized:
   Federal grant to initiate program (1965); funding from Centerville Schools and Washington Park District; student fees
4) Overall purpose:
   To develop an environmental awareness within the community of Washington Township

G. OBJECTIVES:

1) Identify natural areas within the community
2) Promote the concept of "open space"
3) Educate the community to man's interrelationship with the environment
4) Promote diversity of life and practical conservation habits

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--*Seasons*, a guide to seasonal outdoor activity
   Earth Keepers, conservation 2-day study program
   Resident Camp, guide
   Secondary (7-12)--Wildflowers in Washington Township
2) Free materials available:
   Programs available by contact
3) Materials purchasable: None indicated

4) New instructional materials being developed:
    High school-adult slide presentations
5) Materials anticipated for development:
    Additional slide presentations
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 0
2) Teachers adopting all of the materials: 0
3) Teachers using some of the materials: 8
4) Total students using all of the materials: 2,000
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Driscoll Elementary
111 Virginia Avenue
Centerville, OH 45459

Hithergreen Middle School
111 Virginia Avenue
Centerville, OH 45459

Tower Heights Middle School
111 Virginia Avenue
Centerville, OH 45459

Village South Elementary
111 Virginia Avenue
Centerville, OH 45459

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
    Workshop (5 day-long programs)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

1) Expand school land lab sites in the district
2) Expand community programs as weekend programs
3) Expand newsletter as a regular publication

M. PLANS FOR THE FUTURE:

Preparation of curricular material in environmental education using an innovative technique of presentation developed at the center.

N. REPORT SUBMITTED BY: Ed Kramer

September 25, 1979

A. TITLE: INDIAN HILL OUTDOOR EDUCATION CENTER

B. DIRECTOR: Robert C. Terwillegar
Wyandot School
8522 Kenwood Road
Cincinnati, OH 45236
513/793-7942

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education, urban environmental education

ADDITIONAL DESCRIPTORS: Pioneer life education, Indian life education

D. HEADQUARTERS: 9500 Given Road-Indian Hill
Cincinnati, OH

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Children engaged in various activities

E. PRINCIPAL STAFF: 1
12+ volunteers

CONSULTANT SERVICES UTILIZED:
One visit each from U.S. Soil Conservation Service, Ohio Department of Education and Environmental Education Consultant

F. HISTORY:

1) Principal originators:
   Robert C. Terwillegar, teacher; James Sailer, superintendent
2) Date and place of initiation:
   1969; Indian Hill
3) Funding sources utilized:
   School funds and donations (PTA, clubs, individuals, etc.)
4) Overall purpose:
   Curriculum enrichment through special activities in a special setting

G. OBJECTIVES: None indicated

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--Trail and Activity Guides (for our own use); Special programs: 3-trees/Indians; 5-pioneer activities; 6-quadrant studies eco-wide activity
2) Free materials available:
   None by mail; visitors can get some material

3) Materials purchasable: None
4) New instructional materials being developed:
   Guides for our own use, writing, changing, modifying, grades K-6
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: None indicated
2) Teachers adopting all of the the materials: None indicated
3) Teachers using some of the materials: None indicated
4) Total students using all of the materials: 1,000
5) Totals stated are estimated.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE: None indicated

M. PLANS FOR THE FUTURE: None indicated

N. REPORT SUBMITTED BY: Robert Terwillegar
August 30, 1979

A. TITLE: RESIDENT OUTDOOR EDUCATION

B. CONTACT PERSON: Robert C. Terwillegar
Wyandot School
8522 Kenwood Road
Cincinnati, OH 45236
513/793-7942

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Pioneer living, Indian living

D. HEADQUARTERS: Camp Kern (first two weeks in October)
RFD #1
Oregonia, OH 45054

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Normal resident outdoor education activities

E. PRINCIPAL STAFF: 15
10 from school; 5 from camp staff

CONSULTANT SERVICES UTILIZED: No

F. HISTORY:

1) Principal originators:
Robert C. Terwillegar, teacher; Zura J. Patrick, principal; Robert L. Parker, Jean Sanford Replinger, Antioch College Outdoor Education Center
2) Date and place of initiation:
Spring, 1957; Glen Helen School Camp-Antioch College, Yellow Springs, Ohio
3) Funding sources utilized:
School; student fees
4) Overall purpose:
The Schools Camp program is a week-long adventure in which the child lives, eats and learns with his classmates and teachers. All areas of the normal school curriculum are blended with special activities unique to the camp area and the social living situation inherent in a resident camp. The learning experiences are more tangible than theoretical and evaluation is more often in terms of performance than recitation.

The camp program follows a theme set by the teachers and students based upon their needs and interests. Prior to going to camp, the week's specific goals are clearly defined and the program well planned. This program consists of core activities which every student should experience and special activities from which the students may choose. The program is flexible and individual enough to capitalize upon interests developed at camp and to be modified as needed. Staff, counselors and students are aware of their designated camp functions and responsibilities before arriving at camp.

School camp is considered an integral part of the sixth-grade curriculum. Experiences from camp are drawn upon throughout the rest of the year. The staff maintains a low pupil/teacher ratio allowing the teacher, other staff members and the pupils to better see each other as people. The teaching staff is aided by carefully selected high school students who serve as cabin counselors and assist in various other areas of the program.

It is our belief that the camp program enhances the learning climate in several ways: 1) it stimulates the child's natural curiosity; 2) broadens the scope of his thinking and experiences; 3) encourages exploration and investigation through active involvement with his environment; 4) helps student develop the necessary social skills required to perform as a member of groups.

G. OBJECTIVES:

1) Students involved in the Camp Program will be given opportunities to learn to better relate to peers and adults.
2) Students involved in the Camp Program will be provided experiences uniquely related to the out-of-doors at Camp Kern.
3) Students involved in the Camp Program will be given experiences which will enable them to better understand our past; these experiences will include ancient Indians as well as early settlers.
4) Students involved in the Camp Program will participate in visits to museums and locations having historical significance to further their understanding of our history
5) Students involved in the Camp Program will be given opportunities to make choices of activities to enable them to make more meaningful decisions related to their own interests.
6) Students involved in the Camp Program will be provided an opportunity to more directly experience his education by being actively involved in its development.
7) Students involved in the Camp Program will be provided meaningful experiences in outdoor activities in order to fix more firmly in their minds the concepts in natural and life sciences.
8) Students involved in the Camp Program will be provided experiences to assist the child, at this age, to gain a feeling of self-dependence and growth as he masters new skills and learns to take care of his needs at camp.
9) Students involved in the Camp Program will be provided a setting where group action is necessary in planning, solving pertinent problems, and understanding the worth of others to the welfare of the group.

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--Camp Kern has printed guides for their trails and activities; other material is produced or adapted yearly as needed
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION

1) Schools using entire set of materials: 0
2) Teachers adopting all of the materials: 0
3) Teachers using some of the materials: 0
4) Total students using all of the materials: 200
5) Totals stated are definite.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education Program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Twenty-two years of school camping at maximum enrollment, four weeks a year--now two.

M. PLANS FOR THE FUTURE:

Continuation of our program.

N. REPORT SUBMITTED BY: Robert C. Terwillegar
Elementary Science Coordinator
August 30, 1979

Previous Directory References: 1972, 1973

A. TITLE: OUTDOOR HUMAN RELATIONS PROGRAM

B. DIRECTOR: Mr. Charles Webster
Mansfield City Schools
Box 1448
Mansfield, OH 44901
419/522-0611 Ext. 49

C. DESCRIPTORS: Outdoor education

ADDITIONAL DESCRIPTORS: Outdoor human relations

D. HEADQUARTERS: Mansfield Board of Education
53 West Fourth Street
Mansfield, OH 44902

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED:
Director Lee Snooks and his staff of Project BACSTOP in Dowling, Michigan provided inservice, on-site planning and aid in construction of wall, beam, and ropes course

F. HISTORY:

1) Principal originators:
Charles Webster, James Tarantine, and Michael FitzSimmons
2) Date and place of initiation:
Spring, 1978; Mansfield, Ohio
3) Funding sources utilized:
School year 1978-79, Title VII ESEA special projects; school year 1979-80, Mansfield Board of Education
4) Overall purpose:
This humanistic-environmental program will help to integrate minority and non-minority elementary and middle school students through activities at an outdoor center which call for all students to work together to accomplish specific goals concerning themselves and their environment.

G. OBJECTIVES:

1) Desegregation/Integration

To create a mechanism that will stop and reverse the racial separatism and isolation patterns apparent in pre-adolescent students in Mansfield City Schools.

Facilitating Objectives

a. Provide opportunities in an outdoor-environmental setting to create understanding, trust and knowledge of others and their environment.

b. Provide opportunities for "physical togetherness" as a basis for creating commonality of experience and communication for a purpose.

c. Create a setting where students have a personal-felt need to know each other and communicate with each other.

d. Create a setting where human sensitivity, compassion and responsibility for others and their environment are actively cultivated.

2) Expansion of Student Experiences Beyond Local School Programming

To expand student's personal, interracial and environmental experiences beyond their local school, prior to and during their attendance at middle school.

Facilitating Objectives

a. Provide opportunities for fifth-grade and sixth-grade students to experience situations that rely on interdependence of themselves and others to be successful.

b. Provide opportunities for fifth-grade and sixth-grade students to explore their local natural environment and their interactions with it.

H. MATERIALS:

1) Materials produced:
    Primary (K-6)--Students and Teacher's Guides—Fifth Grade
    Students and Teacher's Guides—Sixth Grade
2) Free materials available:
    Both Students and Teacher's Guides are available
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 15
2) Teachers adopting all of the materials: 70
3) Teachers using some of the materials: 0
4) Total students using all of the materials: 1,335
5) Totals stated are definite.
6) Selected schools utilizing program materials:

Main Outdoor Site: Outdoor Center-Richland Rural Life Center
Crall Road
Mansfield, OH 44902

Pre and Post Activities: Simpson Middle School (6th grade)
218 West Fourth Street
Mansfield, OH 44901

Prospect Elementary School (5th grade)
185 Gilbert Street
Mansfield, OH 44903

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1 week)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Teacher's Guide to Outdoor Human Relations Program; handouts of pre and post activities including related school grounds activities

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

The outdoor human relations program began operations on December 4, 1978 with sixth-grade classes from Sherman Middle School struggling to accomplish a trustfall where one student at a time falls backwards off a four-foot stump into the arms of his dozen tribe members. After trust is built, the tribe must cooperate and struggle together to climb over a log beam lashed between two pine trees seven feet off the ground.

Fifth graders coming from Hedges and Woodland met at the Rural Life Center on January 5, 1979 for the first time working together on activities of nature trail, bird watching, cross-country skiing, and the trustfall and beam. The two classes, divided into four tribes--Delawares, Ottawas, Shawnees and Wyandots--took turns going to each of the activities developing trust and cooperation through the day.

The 740 fifth graders in Mansfield City Schools, St. Peters, and Discovery School came back two more days in the spring participating in activities like Indian clay art where clay was dug from the stream and sculpted into artifacts, digging the dead--an archeological dig for dishes, bottles and other materials dropped 100 years ago by a pioneer family, trapping for skunks, raccoons, and birds, and many more activities--conservation pruning, weather forecasting, pond life, and others.

All sixth graders from the three schools came a total of four days with the highlights occurring during the early spring two-day visit. Then the students not only studied the ecology of the woods and stream, investigated the pond, built winter shelters, and did more activities. Two particular highlights for sixth graders were the ropes course and the evening cookout plus star viewing. The ropes course consists of various obstacles like a beam, flea leap (two platforms 30" apart), rope walk, and a cable walk 18' off the ground. Students are safety belayed up to the upper ropes course and have safety ropes attached to a climbing harness around their waist and to a safety cable above them. In this activity students learn how to overcome anxiety and fear and feel good about themselves after overcoming the obstacles.

At the evening cookout tribes used open fires to cook food that they chose the previous day and actually picked up earlier in the day at a local grocery store. The cooking cooperation continued through cleanup and the talent comedy show about outdoor activities throughout the year. The evening culminated in a telescope and naked eye star-planet viewing and a night hike.

Finally on June 5, 1979 the physically handicapped, deaf, and blind students participated in a special outdoor human relations day of programming. All other special education classes like PLP, LD, hearing impaired, some partially sighted, some hearing impaired, and multi-handicapped were integrated in with regular classes from their buildings.

M. PLANS FOR THE FUTURE:

1) Development and revision of struggle accomplishment tasks in human relations areas.
2) Development of more activities for physically handicapped students not mainstreamed with regular classes.

N. REPORT SUBMITTED BY: Michael D. FitzSimmons
Coordinator
September 29, 1979

Previous Directory Reference: 1972

A. TITLE: NEWARK CITY SCHOOLS RESIDENT ENVIRONMENTAL EDUCATION

B. DIRECTOR:
Kathleen J. Fortman
Board of Education
East Main at First Street
Newark, OH 43055
614/345-9891

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED:
Constantly tap: Dawes Arboretum, Newark; State Department of Natural Resources, Environmental Education Section

F. HISTORY:

1) Principal originators:
James T. Russell, Len Feightner, Leona Dickenson, and three others
2) Date and place of initiation:
1966; Big Brothers Camp, Logan, Ohio
3) Funding sources utilized:
Not certain in beginning; last 5 years board-assisted; campers fundraising
4) Overall purpose:
To provide an opportunity for students, their teachers, and a selected staff to develop and increase their total sense awareness of those aspects of the out-of-doors which may not or cannot be learned in a classroom. Such will be accomplished in a healthy, education and social atmosphere.

G. OBJECTIVES:

Each person will learn to depend upon himself to some extent through interaction with others, in a relaxed, familiar and/or new social and educational setting, provided through group living.

H. MATERIALS:

1) Materials produced:
Primary (6)--Each year new habitat study classes are written up by the Director to meet the needs of the students in the changing surroundings of the camp.
2) Free materials available:
Copies of the habitat study classes used in resident program
3) Materials purchasable: None
4) New instructional materials being developed:
Yes, sixth grade.

5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 14
2) Teachers adopting all of the materials: 33
3) Teachers using some of the materials:
4) Total students using all of the materials: 855
5) Totals stated are definite.
6) Selected schools utilizing program materials:

William E. Miller Elementary School
Granville Road at Country Club
Newark, OH 43055

Fulton Middle School
160 Heath Road
Heath, OH 43055

Blessed Sacrament Elementary School
E. Main at Penney Street
Newark, OH 43055

McGuffey Elementary School
North 24th Street
Newark, OH 43055

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshops (3--each 2 hours)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Our sixth-grade resident program has been strong, including all sixth graders in the Newark, Heath and Newark Parochial Schools since 1968. We utilize a resident facility for seven weeks--each class attending Monday through Friday.

Children have 5 two-hour habitat study classes, plus other "discovery classes" throughout the week. High school students serve as teachers in classes, and cabin counselors. All counselors (150) go through 30 classroom hours of training with the Resident Environmental Education Director before resident camp.

M. PLANS FOR THE FUTURE:

If school levy passes; geared toward a fifth-grade program.

N. REPORT SUBMITTED BY: Kathleen J. Fortman

November 7, 1979

A. TITLE: PROJECT ENRICH - ECOLOGY K-12

B. DIRECTOR: Peter M. Metro
Rocky River City Schools
Educational Services Center
21600 Center Ridge Road
Rocky River, OH 44116
216/333-6000 Ext. 294

C. DESCRIPTORS: Environmental education, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Existing program can be observed

E. PRINCIPAL STAFF: 1
plus adult and student volunteers

CONSULTANT SERVICES UTILIZED:
Curriculum developers; program evaluators

F. HISTORY:

1) Principal originators:
   Rocky River City Schools
2) Date and place of initiation:
   April, 1974; Rocky River City School District
3) Funding sources utilized:
   ESEA Title III and Title IV-C
4) Overall purpose:
   To meet the following critical needs:
   1) Improvement of learning through altered staff training and utilization patterns
   2) Improvement of vocational and career opportunities
   3) Improvement of student attitudes and skills in social and interpersonal problems

G. OBJECTIVES:

1) Increase students, teachers and citizens understanding of ecological studies
2) Improve techniques for recruitment, training, coordination and utilization of volunteers
3) Develop process-oriented instructional materials for ecological studies K-12
4) Encourage communication between teachers, students and citizens of the various public and non-public schools in the school district
5) Help students learn of the implications of ecology upon their future and their careers

H. MATERIALS:

1) Materials produced:
    - Primary (K-6)--
        - This Glorious Mudpile 4-6 by Mary Ellen Cabbage, $7.50
        - Lake Erie 4-6 by Rachel E. Green and Peter M. Metro, $3.50
        - Ecology Enrichment K-6 by Shirley Conner and Jean Siegel, $7.00
        - The Pond Community (Primary Level) by Shirley Conner, $5.00
        - The Pond Community 4-6 by Peter M. Metro and Rachel E. Green, $6.00
        - Weather 4-6 by Peter M. Metro and Rachel E. Green, $3.50
    - Secondary (7-12)--
        - Terrestrial and Aquatic Ecology by Bud Larsen and Linda Swartz, $8.00
        - Field Ecology 10-12 by David Long and Nancy Powell, $9.00
    - Other--
        - Ecology for the Exceptional Child (EMR) by Frederick Jennings and Peter M. Metro, $10.00
2) Free materials available: None
3) Materials purchasable:
    Listed in 1 above
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

The curriculum materials developed through this project were printed and distributed throughout the State of Ohio by the Ohio Department of Education, Division of Planning and Evaluation. Over 20,000 copies were disseminated; there is no way of estimating number of schools, teachers, and students.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs: None

K. MATERIALS EVALUATION:

1) Evaluator:
    External evaluators employed through the project
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

Facilitating Objectives

1) Maintain a minimum staff of 100 trained volunteers to assist in teaching.
2) Develop levels K-3, 4-6, 7-8 and 10-12 ecology materials (process-oriented).
3) Develop an upper level educable mentally retarded (EMR) and adjusted learning program (ALP) ecology workbook.
4) Develop a level 5 through adult text on the Rocky River Valley (a segment of the Cleveland Metroparks). Text will stress the social and geological history of the valley.
5) Develop student-produced ecology audio-tutorial materials.
6) Measure the participating students' increased respect for and understanding of his environment.
7) Provide opportunities for high school students to have career experiences with professional ecologists.
8) Measure the ability of students to apply process skills to the study of ecology.
9) Measure teacher's use of developed ecology materials in the study of ecology.
10) Measure teacher's confidence in using process materials in the study of ecology.
11) Measure volunteer mastery of basic skills necessary for them to work with students and ecology materials.

M. PLANS FOR THE FUTURE: None indicated

N. REPORT SUBMITTED BY: Rachel E. Green, Coordinator
Peter M. Metro, Past Project Director
September 27, 1979

ERIC Documents:

ED 180 806	Ecology for the Exceptional Child
ED 180 807	This Glorious Mud Pile (Rocky River Valley), Revised Edition
ED 180 808	The Pond Community. Primary Level. Teacher's Manual
ED 180 809	The Pond Community. Teacher's Manual
ED 180 810	Weather and Weather Maps. Teacher's Manual
ED 180 811	Ecology Enrichment, Grades 1-6
ED 180 812	Ecology Enrichment, Grades 7-8
ED 180 813	Field Ecology, Grades 10-12
ED 180 814	Ecology for the Exceptional Child, Grades 7-12, EMR

A. TITLE: RESIDENT OUTDOOR EDUCATION PROGRAM

B. DIRECTOR: Christine Dixon
North High School
701 East Home Road
Springfield, OH 45503
513/399-4550

C. DESCRIPTORS: Conservation Education, Environmental Education, Natural Resources, Outdoor Education.

ADDITIONAL DESCRIPTORS: School Camping, Resident Programs

D. HEADQUARTERS: Springfield City Schools
49 East College Avenue -- Box 89
Springfield, OH 45504
513/328-2132

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Fifty acre land laboratory with natural communities of field, thicket, marsh, pond, and forest; for this program, YMCA Camp Evergreen, near Piqua, Ohio, is used.

E. PRINCIPAL STAFF: One person

CONSULTANT SERVICES UTILIZED: Have used materials from Glen Helen Outdoor Education Center and Aullwood Audubon Center and Farm.

F. HISTORY:

1) Principal originators:
Environmental Specialist Christine Dixon and selected sixth grade teachers
2) Date and place of initiation:
Initial planning began in the fall of 1977. Programs began in April, 1978, and subsequent springs since.
3) Funding sources utilized:
The cost of the program has been covered through parent, PTA and PTO support, student fund-raising activities, and grants from the Springfield City Schools Career Education Department.
4) Overall purpose:
To provide a resident program offering hands-on learning experiences in the areas of general awareness of the outdoors, wise use of natural resources, social living in a camp setting, and cultural heritage.

G. OBJECTIVES:

1) Have students investigate the interrelationships of ecological communities.
2) Have students study proper use of resources and discuss problems and alternative solutions.
3) Have students live together in family groups and develop responsible group behavior.
4) Have students explore the cultures of early settlers and/or native Americans in this region.

H. MATERIALS:

1) Materials produced:
    Sixth Grade Resident Outdoor Education Program Student Handbook, a booklet of activities that students can use while in the program.
2) Free materials available: none listed
3) Materials purchasable:
    Handbook available on request, at cost.
4) New instructional materials being developed: None
5) Materials anticipated for development:
    An orientation slide show for parents and students describing the 2½ day Resident Outdoor Education Program.
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 9
2) Teachers adopting all of the materials: 14
3) Teachers using some of the materials: 14
4) Total students using all of the materials: 350
5) Totals stated are definite, in 1979 program.
6) Selected schools where the program materials are being used:

Horace Mann School
521 Mountjoy Street
Springfield, OH 45505

Lincoln Elementary
1500 Tibbetts Avenue
Springfield, OH 45505

Simon Kenton School
1221 East Home Road
Springfield, OH 45503

Fulton Elementary
631 S. Yellow Springs St.
Springfield, OH 45506

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
    Workshop (one day professional leave from school)
    Planning and development of curricular activities at monthly meetings.

5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
Teacher Outdoor Education Activities Handbook, which includes activity suggestions for field trips during the program.

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

On a voluntary basis, sixth grade teachers in Springfield City Schools sign up to participate in the Resident Outdoor Education Program. The 2½ day experience at a local YMCA camp is instructed by the teachers, the school Environmental Specialist, and the camp's one environmental coordinator. Two classes go at a time. All training and in-service is provided by the Environmental Specialist for the teachers to offer activity suggestions for their outdoor "classes."

Learning activities focus upon community approaches rather than disciplines. Skills from all areas of the curriculum are used during the field trips. Additional supervision is provided by high school students, also trained by the Environmental Specialist.

M. PLANS FOR THE FUTURE:

We will continue to expand our in-service training and encouragement of more teachers to become involved in our Resident Outdoor Education Program.

Further development of a teacher and a high school student counselor handbook to aid in training will occur.

N. REPORT SUBMITTED BY: Christine Dixon
Environmental Specialist
October 4, 1979

A. TITLE: TRUMBULL AREA MULTI-PURPOSE ENVIRONMENTAL EDUCATION PROGRAM (TAMPEEL)

B. DIRECTOR: Norman E. Downing
Trumbull County Board of Education
6540 S. Tod, S.W.
Warren, OH 44481
216/824-2534

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Ellsworth-Bailey Road
Warren, OH 44481

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
40-acre land lab in use each school day September-November and mid-March/May. About 60 students per day in four different areas throughout the day

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
During the first three years as an ESEA Title III project an evaluation consultant was used

F. HISTORY:

1) Principal originators:
   Lordstown and Trumbull County Boards of Education
2) Date and place of initiation:
   August, 1973; Trumbull County
3) Funding sources utilized:
   Title III, state education funds the first three years; Trumbull County Board of Education; Lordstown Board of Education
4) Overall purpose:
   Total environmental education program for fifth-grade students and their teachers, including the total school year integrated curriculum with experiences at the land lab and in the classroom.

G. OBJECTIVES:

1) To develop in students and teachers a positive attitude toward environmental management
2) To increase in students and teachers knowledge of the interrelationship of man and the environment

H. MATERIALS:

1) Materials produced:
   Primary (K-6)
   1) 600-page Activity Manual
   2) Three filmstrips/tapes
   3) Tests (attitude, knowledge)
   4) Silkscreen K-4
2) Free materials available:
   Descriptive leaflet (1 sheet); quarterly newsletter (1 sheet)
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   Yes, fifth-grade
5) Materials anticipated for development:
   Solar Heating and Cooling Curriculum K-12, including vocational
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 16
2) Teachers adopting all of the materials: 97
3) Teachers using some of the materials: 50
4) Total students using all of the materials: 2,200
5) Totals stated are estimated (#1,#2,#4)/definite (#3).
6) Selected schools utilizing program materials:

Labrae Middle School
R.D. 2
Newton Falls, OH 44444

Southington Elementary School
R.D. 1, Box 129
Southington, OH 44470

Lakeview Middle School
Hillman Drive
Cortland, OH 44410

H.C. Mines Elementary School
850 Howland-Wilson Road
Warren, OH 44484

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (2-1/2 hours fall/2-1/2 hours spring)
   Other--Demonstration teaching (2 hours fall-at land lab)
   (40 minutes winter-in classroom)(2 hours spring-at land lab)

K. MATERIALS EVALUATION:

1) Evaluator:
   Dr. Sonya Dinero, Kent State University
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

Each fifth-grade teacher is provided with a manual of suitable activities for classroom, school yard and land lab. The manual includes teaching outlines, student guides, background information, evaluation and additional sources of material. They attend a half-day inservice during early September and again in March. Monthly letters and other information are sent. After viewing a filmstrip/tape about the program and other preparation by the classroom teacher, each class studies two full school days at the lab. The fall lessons include: Trees, Water Pollution, Insects, Animal Signs, and Waste Management. The spring lessons include: Pond Life and Succession, Birds, Tree Planting, Water Cycle, Soil Formation and Waste Management Follow-up. In small rotating groups the teacher teaches a half day and observes a half day. The TAMPEEL staff and a volunteer corps teaches throughout the day.

In January/February a Bird Feeding/Identification film is sent to each room. Each of the two TAMPEEL instructors presents a special lesson to each class. Last year's topics were: 1) Air Characteristics and Conservation, 2) Animal Life in Winter (with special emphasis on the beaver). New topics are developed each winter. Appropriate follow-up activities are integrated into the curriculum throughout the school year. Some special events are: Silk Screening TAMPEEL T-Shirts, Qualifying for Environmental Awards certificates, Entering the TAMPEEL poetry contest, etc.

Professional evaluation has shown students' knowledge of the environment to dramatically increase and their attitude toward the care of the earth to improve. Students are enthusiastic about TAMPEEL, teachers rate it as excellent, administrators are very supportive and parents feel that it is an excellent educational program. The State Board of Education validated the program as successful in meeting its objectives, economically efficient and worthy of being utilized by other school systems.

M. PLANS FOR THE FUTURE:

1) Solar education including vocational training
2) Environmental education for junior high school gifted students

N. REPORT SUBMITTED BY: Norman E. Downing
November 12, 1979

A. TITLE: WESTERVILLE OUTDOOR EDUCATION PROGRAM

B. DIRECTOR: Ned A. Mosher
Westerville City Schools
270 North Spring Road
Westerville, OH 43081
614/882-8716

C. DESCRIPTORS: Conservation education, environmental education, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Land Laboratory, seasonal programs

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED:
Tri-District Outdoor Education Project (former program);
Franklin County Soil and Water Conservation District;
State Department of Education-Environmental Education;
State Department of Natural Resources; and others

F. HISTORY:

1) Principal originators:
   Gene Knight, Tri-District Outdoor Education
2) Date and place of initiation:
   1968-69; Westerville, Worthington and Grandview School Districts
3) Funding sources utilized:
   Federal and local (3 years); now local 8 years
4) Overall purpose:
   Develop land laboratories for schools and train teachers in environmental education

G. OBJECTIVES:

1) To learn firsthand situations in conservation
2) Experience individual growth and development with thrill of discovery
3) Learn to live and work together in real life situations
4) Develop new skills and interests and improve attitudes toward learning
5) Learn to appreciate the complexity, interrelatedness and beauty of the environment

H. MATERIALS:

1) Materials produced:
   - Primary (K-6)--Arbor Day Guide; Maple Syrup Program Guide; Franklin County Geology Guide; Resident Outdoor Education Guide
   - Secondary (7-12)--Camp Counselor Course Handbook
   - Other--Teacher Resource Guides; video tapes: maple syrup making, apple harvest program
2) Free materials available: None indicated
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   - Zoo Program Guide, K-6
5) Materials anticipated for development:
   - Pioneer Crafts Program Guide
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 14
2) Teachers adopting all of the materials: 200
3) Teachers using some of the materials: 50
4) Total students using all of the materials: 5,000
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Hanby School
South State Street
Westerville, OH 43081

Robert Frost Elementary School
270 North Spring Road
Westerville, OH 43081

Pointview Elementary School
720 Pointview Drive
Westerville, OH 43081

Cherrington Elementary School
522 Cherrington Road
Westerville, OH 43081

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   - Workshop (5-10 hours in-service)
   - Evening Classes (1-1/2 to 2-1/2 hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   - Resource Guides

K. MATERIALS EVALUATION:

1) Evaluator:
   - Local Teacher Administrator Committee
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE: None indicated

M. PLANS FOR THE FUTURE:

1) Science and environmental education topics
2) Pioneer Crafts Program
3) Zoo Visitation Program: aquarium, aviary, reptiles and amphibians

N. REPORT SUBMITTED BY: Ned Mosher
September 3, 1979

A. TITLE: SCHOOL-OUT-DOORS (SOD)

B. DIRECTOR: Jess Nelson
Guymon Public Schools
Box 1307
Guymon, OK 73942
402/338-3371

C. DESCRIPTORS: Conservation education; energy education, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Site with energy demonstrations, ponds, trees and a greenhouse; classroom where students work on their projects

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
Oklahoma State Department of Education; Oklahoma State University; Shell Oil; Phillips Petroleum; Texas County Soil Conservation Service; Southwestern Public Service; Community Volunteers knowledgeable in a particular area

F. HISTORY:

1) Principal originators:
   Eugene Keith, Superintendent of Schools; Jess Nelson, principal; Tamra Manos, instructor; and the Guymon School Board
2) Date and place of initiation:
   1977; School-Out-Doors site in Guymon located on the west side of the high school grounds
3) Funding sources utilized:
   State Department of Education; Title IV-C ($63,000); local board (matching funds)
4) Overall purpose:
   -To create an awareness of the interdependency of food, water and energy; develop a healthy respect of our resources
   -To teach children the importance of conservation and research of new ideas and develop pride in our city, state and nation

G. OBJECTIVES:

See L (Project Summary)

H. MATERIALS:

1) Materials produced: None indicated
2) Free materials available: None indicated
3) Materials purchasable: None
4) New instructional materials being developed:
   Yes, grades 4, 5 and 6
5) Materials anticipated for development:
   See L (Project Summary)
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: None indicated
2) Teachers adopting all of the materials: None indicated
3) Teachers using some of the materials: None indicated
4) Total students using all of the materials: 450
5) Totals stated are estimated/definite: Not indicated

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs: None
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: Yes

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Objective 1

Students will gain awareness and knowledge of energy use, finiteness, future potential sources, need for conservation, and conservation measures as evidenced by pre- and posttest performances.

Activities

1) Energy Awareness
   a) History of energy use
   b) Past, present, future energy sources
   c) Shortages of fossil fuels
   d) Conservation of energy
2) Future Energy Sources
   a) Solar, nuclear, geothermal (site)
   b) Effects of weather on solar (site)
3) Fossil Fuels
   a) Shortages
   b) Power sources-usages
4) Pride in State/Nation
   a) Resources
5) Heat Temperature Experiments on Site Location

6) Energy Usage
    a) Recreational activities (site)
7) Conservation
    a) Ways to conserve
    b) Insulation (site and classroom)
8) Abilities of man to take natural energies and turn them into usable forms
    a) Site demonstrations of water wheel, windmill, wind charger and solar unit
    b) Various site demonstrations

Objective 2

Students will gain awareness and knowledge of: man's needs for water; water as a source of energy; water pollution; water conservation; water testing; and water treatment as evidenced by skills, demonstration and performance on tests.

Activities

1) Pollution
    a) Testing water for pollution (site and various locations)
    b) How land pollution can affect water (site and various locations)
2) Source of power
    a) Past
    b) Present
    c) Site demonstration
3) Watering methods
    a) Experiments in classroom and site
    b) Growth experiments
4) Water Cycle
    a) Classroom activity
    b) How weather affects the cycle (site and classroom)
5) Understanding how fertilizers affect aquatic life
    a) Classroom and site experiments
6) Water Usage
    a) Mini-kit showing how water is cleaned in a city

Objective 3

Students will gain skills and knowledge related to food production and utilization as evidenced by ability to demonstrate skills and practices and by performance on tests.

Activities

1) Use of Land
    a) Soil testing and preparation
    b) Food chains (site)
    c) Conservation and preventing erosion
2) Food comparisons
    a) Effect of overcrowding when growing food (site)
    b) Comparative shopping and buying

3) Earthworms and Soil Improvements
    a) Site experiments
4) Types of soil and impact on food growing
    a) Site experiments
5) Gardening (site and classroom)
    a) How to plant a garden
    b) What to plant
    c) Where to plant
    d) When to plant
6) Meal Planning/Cooking
    a) Difference in food habits (family, state, nations)
    b) Cooking meals from different states and nations
    c) Solar cooking (site)
    d) Food nutrition - 4 basics
7) Grasses
    a) Types
    b) Help in lessening erosion
    c) Irrigation systems (most effective)
    d) A food product

Objective 4

The School-Out-Doors site will be operational by the spring of 1980. This includes: greenhouse/classroom; windmill; wind charger; solar collector; water wheel--overshot and undershot; methane plant; landscaping, grass and experiment plots; two ponds stocked with fish and marine life.

Objective 5

Staff members will develop 10 exportable teaching units by the spring semester of 1980.

M. PLANS FOR THE FUTURE:

1) Individuals and groups of teachers are currently developing units that can be used as a regular part of the curriculum.
2) The objective and activity sheet shows a listing of these units.
3) We are hoping to have a complete set of exportable units available to any teacher to use. We are building many of our units around areas already used in regular classwork.

N. REPORT SUBMITTED BY: Jess Nelson/Tamra Manos
September 12, 1979

A. TITLE: PROJECT RESEARCH

B. DIRECTOR: Jimmie Pigg
300 North Eastern
Moore, OK 73160
405/794-1531

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Water Research Laboratory

E. PRINCIPAL STAFF: 24

CONSULTANT SERVICES UTILIZED:
In certain areas such as plankton analysis, benthos identification and diatom survey

F. HISTORY:

1) Principal originators:
   Jimmie Pigg; Dr. H. Bewley
2) Date and place of initiation:
   1975
3) Funding sources utilized:
   State funds for gifted and talented students
4) Overall purpose:
   Give student actual field research experiences which will encourage additional study in sciences

G. OBJECTIVES:

To provide opportunities to carry out basic research of the environment and survey the ecological areas of Oklahoma.

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--four lesson plans
2) Free materials available:
   Lesson Plans (K-6)
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development:
   Guides for teachers
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 13
2) Teachers adopting all of the materials: 95
3) Teachers using some of the materials: All fifth-grade teachers
4) Total students using all of the materials: 1,500
5) Totals stated are definite.
6) Selected schools utilizing program materials:
   All elementary schools in Moore and all secondary schools

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (2 days)
   Summer Institute
   Other (2-day in-service training)

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

Project Research is designed to have students learn for sake of learning--no grading or scores are used. Each child at 6-12 spends at least 8 weekends in the field surveying as many of the factors of ecological areas of Oklahoma as possible.

M. PLANS FOR THE FUTURE:

Additional area to be included.

N. REPORT SUBMITTED BY: Jimmie Pigg
September 5, 1979

Previous Directory References: 1973, 1975, 1976

A. TITLE: NEED (NATIONAL ENVIRONMENTAL EDUCATION DEVELOPMENT)

B. EXECUTIVE DIRECTOR: Frank Bunch
Goddard Youth Camp
Route 1
Sulphur, OK 73086
405/993-3333

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED:
National Park Service; universities; resource persons

F. HISTORY:

1) Principal originators:
   National Park Service
2) Date and place of initiation:
   May, 1969; operated national pilot program for NEED at Goddard Camp
3) Funding sources utilized:
   Goddard Foundation; student fees
4) Overall purpose:
   Outdoor education; environmental awareness; conservation

G. OBJECTIVES:

1) Outdoor education
2) Environmental awareness
3) Conservation

H. MATERIALS:

1) Materials produced:
   Other--slide series and 30-minute 16mm color/sound film for all grade levels
2) Free materials available: None indicated
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   Yes, all grades
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 20
2) Teachers adopting all of the materials: Not indicated
3) Teachers using some of the materials: Not indicated
4) Total students using all of the materials: Not indicated
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Ben Harman
Lewisville Texas Schools
Lewisville, TX

Keith Shaw
Seminole Oklahoma Schools
Seminole, OK

Karleen Hightower
Plano Texas School
Plano, TX

Dr. Don Williams
Birdville Independent School District
Ft. Worth, TX

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (2 days)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   NEED curriculum guides, Silver-Burdett Publishing Co.

K. MATERIALS EVALUATION: Yes

L. SUMMARY OF ACTIVITIES TO DATE:

This program has operated for 10 years and over 30,000 students and hundreds of teachers have participated. It is exceptionally well attended and other schools are on a waiting list for program space as it becomes available. The students and teachers live the Monday-Friday week at camp.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Frank Bunch
September 4, 1979

Previous Directory Reference: 1972

A. TITLE: ALTERNATIVE NATURAL SCIENCE FOR HANDICAPPED STUDENTS

B. DIRECTOR: John E. Roller
Science Department
Tulsa Public Schools
P.O. Box 45208
31st and New Haven
Tulsa, OK 74145
918/743-3381 Ext. 482

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
September-November and April-May due to weather

E. PRINCIPAL STAFF: 16

CONSULTANT SERVICES UTILIZED: None

F. HISTORY:

1) Principal originators:
Science supervisor; special education supervisor
2) Date and place of initiation:
July 1, 1977
3) Funding sources utilized:
ESEA Title IV-C
4) Overall purpose:
The goal of alternative natural science for the handicapped student is to supplement the natural science curriculum for the more restricted handicapped students (those identified as deaf, blind, orthopedically handicapped, and trainable mentally retarded).

G. OBJECTIVES:

1) To implement supplemental natural science instructional program for restricted handicapped students which would include hands-on laboratory activities both within and outside their classroom environment. During the project year, there will be an improved mean correct response on a natural science criterion referenced test administered to approximately 300 restricted handicapped participants.
2) To provide assistance for restricted, handicapped children to reduce the constraints under which they live and learn. During the project year, there will be a mean positive response on a natural science check list based on teacher observations of students' behavior which will be completed by approximately 34 special education teachers.

H. MATERIALS:

1) Materials produced:
   Curriculum guide with activities
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 15
2) Teachers adopting all of the materials: 15
3) Teachers using some of the materials: None indicated
4) Total students using all of the materials: 300
5) Totals stated are definite.
6) Selected schools utilizing program materials:
   All schools in the Tulsa Public School District

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (10 hours)

K. MATERIALS EVALUATION:

1) Evaluator:
   Federal Project Office; Research Department, Tulsa Public Schools
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

The major reason for the existence of the Tulsa Public Schools is to provide quality educational experiences for all its students. Every effort is made to correct discovered deficiencies or disparities and to improve present teaching methods and techniques

The children identified live in an extremely restricted and limited environment. Attempts to expand their experiences beyond the home and classroom often are inadequate and inconsistent. An assessment of the Tulsa Public Schools' special education programs reveals a limited natural science curriculum. Hands-on natural science laboratory activities presented in an organized, consistent, formal manner are all but nonexistent for the handicapped student. Teaching strategies appear inadequate when teaching natural science to handicapped students.

Results of a Special Education Needs Assessment Survey conducted with parents of restricted special education children indicated the teaching of an adequate functional vocabulary and use of basic numbers are very important. However, of equal concern to these parents was that their children have an opportunity to participate in outdoor activities safely with competence and confidence.

Some of the hands-on activity results include: discovery of the interdependence of animals, plants, soil, water and climate; sensory awareness of natural settings which will enhance the use of a person's physical senses of sight, taste, smell and hearing, development of vocabulary; and an awareness of the teacher as a human being. The teacher and pupil are brought together in a closer, more informal environment than that permitted in the day-to-day classroom.

Narrative Description of Program

The Alternative Natural Science Program for the Handicapped Student is innovative in that it will include a curriculum to supplement existing instruction, identify appropriate teaching strategies, provide inservice training in natural science for teachers, and implement outdoor laboratory natural science activities for restricted handicapped children.

The program is also exemplary as it will serve as a model for any school system interested in extending its handicapped instructional program outside the walls of the regular classroom.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: John Roller
November 19, 1979

A. TITLE: ENERGY AND ENVIRONMENT LITERACY

B. DIRECTOR: Harold V. Wik
Box 200
Beaverton Schools
Beaverton, OR 97075
503/649-0467

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, outdoor education, population education, urban environmental education.

ADDITIONAL DESCRIPTORS: World resources, land use, water use.

D. HEADQUARTERS: Same as B.

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Energy simulator use; E.M.E. Program in action.

E. PRINCIPAL STAFF: 20 (includes part-time personnel)

CONSULTANT SERVICES UTILIZED:
Energy and Man's Environment, Inc., 0224 South West Hamilton, Portland, OR 97201; Project ICE, Green Bay, WI.

F. HISTORY:

1) Principal originators:
   Beaverton Schools - personnel (local)
   Energy and Man's Environment - personnel
   Project ICE, Green Bay, WI
2) Date and place of initiation:
   Beaverton Schools, 1974.
3) Funding sources utilized:
   Title III E.S.E.A , district funding, E.M.E. pilot and developmental grants, Department of Energy (US) through the Northwest College and University Association for Science (NORCUS), 100 Sprout Road, Richland, WA 99352.
4) Overall purpose:
   To provide energy literacy.

G. OBJECTIVES:

The ultimate purpose of energy education is to teach and practice decision-making skills that affect the lives of every individual. These skills are necessary to assure centuries of quality life on our fragile planet. Thus an educational goal would be to insert by prescription, ENERGY EDUCATION IN A MEANINGFUL FORMAT FOR EVERY STUDENT WHO ATTENDS AND/OR GRADUATES FROM OUR DISTRICT SCHOOLS.

1) Program goals:
   a) To provide students with decision-making skills for personal implementation at home, at work and during leisure time activities in these areas:
      - Energy use
      - Energy allocation
      - Energy alternatives
      - Energy-environment trade-offs
   b) To provide students with a practical laboratory (the school site) where students can utilize skills in a realistic setting.

2) Student outcomes:
   a) Each student will understand the individual's role in conservation.
   b) Each student will have factual knowledge in the areas of:
      - Energy sources
      - Energy uses
      - Energy conversions
      - Energy limits
      - Energy futures
   c) Each student will have knowledge and understanding of the role of individuals and agencies in the development of alternatives.
   d) Each student will have knowledge and understanding of the role of policy-making bodies and large suppliers/users in the area of conservation.
   e) Each student will understand the various life-style options that will be available for individuals, communities, etc.
   f) Each student will understand the need for interaction of states, nations, etc. in policy making for energy use and energy supplying.
   g) Each student will be able to relate cause and effect at each level of decision making - individual, community, nation, and world.

H. MATERIALS:

1) Materials produced:
   Energy and Man's Environment.
2) Free materials available:
   Contact:
   Energy and Man's Environment
   Dr. John Jones, President
   0224 Southwest Hamilton Souite 301
   Portland, OR 97201
3) Materials purchasable: See 2) above for address
4) New instructional materials being developed:
   Energy simulator curriculum materials, grades 1 - 12.
5) Materials anticipated for development:
   - Tape slides
   - Video tape
   - Pilot program materials
   - Site audit
6) Commercial association: None.

I. IMPLEMENTATION:

1) Schools using entire set of materials: 21
2) Teachers adopting all of the materials: 300+
3) Teachers using some of the materials: 300+
4) Total students using all of the materials: 800
5) Totals stated are estimated
6) Selected schools where the program materials are being used:

Mountain View Intermediate
Box 200
Beaverton, OR 97075

McKinley Elementary
Box 200
Beaverton Schools
Beaverton, OR 97075

West Tualatin View Elementary
Box 200
Beaverton, OR 97075

Aloha High School
Box 200
Beaverton Schools
Beaverton, OR 97075

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program:
   Anticipated 1980
4) Kinds of preparation programs:
   Workshop (1 hour refresher, 2 hour initial)
   Summer Institute (planned)
   Evening Classes (planned)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Program guides, activity books, resource materials.

K. MATERIALS EVALUATION:

1) Evaluator:
   Principal, key teachers, third party visitations, E.M.E. (information from E.M.E. is available)
2) Pertinent published research on evaluation:
   Dr. Ed Dalton, Doctoral Dissertation. Contact EME 503/226-7131.
3) Unpublished research summary:
   In progress.

L. SUMMARY OF ACTIVITIES TO DATE:

1. Awareness workshops
2. Curriculum development
3. Curriculum implementation
4. Mergerof programs - now energy environment literacy
5. Refresher workshops
6. New school workshops
7. Dissemination
8. Public relations

M. PLANS FOR THE FUTURE:

1. Use of building and school sites as laboratories (energy audits, conservation, etc.)
2. Community involvement in the educational area of energy literacy.
3. Multi-agency planning.

N. REPORT SUBMITTED BY: Harold V. Wik
Curriculum specialist (Project Director)
September 28, 1979

A. TITLE: SOUTH WILLAMETTE ENERGY ACTION TEAM

B. DIRECTOR: Dr. Allan Hughes
Eugene Water and Electric Board
500 E. 4th Street
Eugene, OR 97401
503/484-2411

C. DESCRIPTORS: Conservation education, energy education

D. HEADQUARTERS: 1886 Buck Street
Eugene, OR 97405

E. PRINCIPAL STAFF: 5

CONSULTANT SERVICES UTILIZED:
Consultants from both business and education have been used in various workshop situations

F. HISTORY:

1) Principal originators:
Dr. Allan Hughes; "Energy and Man's Environment" staff
2) Date and place of initiation:
October 25, 1977
3) Funding sources utilized:
Eugene Water and Electric Board (EWEB)
4) Overall purpose:
To help facilitate the teaching of energy literacy in the Eugene Water and Electric Board service area and in the State of Oregon

G. OBJECTIVES:

1) To train key energy teachers for each school in the Eugene Water and Electric Board service area
2) To develop demonstration materials for teachers
3) To develop materials for local energy sites

H. MATERIALS:

1) Materials produced: None indicated
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed:
Yes, grades K-12
5) Materials anticipated for development:
Guide to Lookout Dam; Guide to Oregon State University nuclear reactor
6) Commercial association: None

I. IMPLEMENTATION:

Since we deal with infusion as a key to energy education, it is difficult to respond.

1) Schools using entire set of materials: see paragraph above
2) Teachers adopting all of the materials: see paragraph above
3) Teachers using some of the materials: 200
4) Total students using all of the materials: 5,000
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Howard Elementary School
700 Howard Avenue
Eugene, OR 97404

River Road Elementary School
120 W. Hilliard Lane
Eugene, OR 97404

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1-30 hours)
   Summer Institute (2 weeks)

K. MATERIALS EVALUATION: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

1) This project has focused on teacher training and materials production. At this time about 200 teachers in Eugene District 4J, Bethel District 52, and McKenzie District 68 have been involved. Many of these teachers function as key teachers in their buildings where they disseminate information, coordinate building energy efforts, and assist other teachers with energy education efforts.
2) Considerable effort has also been expended in developing materials for teacher use. Make One-Take One workshops have allowed teachers to build energy demonstration items such as hand crank electrical generators, watt-rate meters, and electrical coils. Materials and plans were supplied by the project. Participants make one item for themselves and one for our local materials lending service.
3) Along with workshops, the project has helped sponsor a state energy conference for teachers. Finally a good deal of work was done to develop a workable tour guide format for various energy generation sites. That guide is in a pilot test form.

M. PLANS FOR THE FUTURE:

1) Continue teacher training with workshops
2) Initiate administrative level energy awareness conferences for local school districts
3) Help unite local energy education efforts

N. REPORT SUBMITTED BY: Allan Hughes
September 22, 1979

A. TITLE: ENERGY MANAGEMENT/RECYCLING

B. DIRECTOR: William T. Steiner
School District 4J
200 N. Monroe
Eugene, OR 97402
503/687-3257

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, urban environmental education

D. HEADQUARTERS: 715 W. 4th
Eugene, OR 97402

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
Energy: 1) Marquess Engineering; 2) Eugene Water and Electric Board; 3) Energy and Man's Environment. Recycling: 1) local recycling firms and organizations; 2) Department of Environmental Quality

F. HISTORY:

1) Principal originators:
   Tom Payzant, superintendent; Vernon Smith, assistant superintendent for business services
2) Date and place of initiation:
   1973
3) Funding sources utilized:
   District 4-J budget and bond levy; Eugene Water and Electric Board grant; state and federal matching funds

G. OBJECTIVES:

1) Integrated energy management program: monitoring of daily fuel use; review of building modifications; cutback in fuel consumption
2) Involvement of everyone occupying buildings in energy and recycling programs

H. MATERIALS:

1) Materials produced:
   Other--Booklet identifying paper grades by sample; energy management data sheets: example, boiler use
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None indicated

I. IMPLEMENTATION: None indicated

J. TEACHER PREPARATION: None indicated

K. MATERIALS EVALUATION: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

The energy management recycling project is interrelated with Dr. Al Hughes' energy education project.

1) Energy audits of 4-J buildings with services of Marquess Engineering
2) Development of an energy management division within the plant operations structure
3) Completion of preliminary energy audits for Oregon's Department of Education
4) Development of review process for proposed budget items which affect HVAC systems in 4-J buildings
5) District-wide paper recycling program

M. PLANS FOR THE FUTURE:

1) Set up preventive maintenance program, especially geared toward energy efficiency
2) Set goals for school district energy use
3) Work with other school districts to strengthen school board policies

N. REPORT SUBMITTED BY: William T. Steiner
September 12, 1979

A. TITLE: JOHN INSKEEP ENVIRONMENTAL LEARNING CENTER (ELC)

B. DIRECTOR: Gerald (Jerry) Herrmann
Clackamas Community College
19600 South Molalla Avenue
Oregon City, OR 97045
503/656-2631 Ext. 351

C. DESCRIPTORS: Conservation education, energy education, environmental education, outdoor education, urban environmental education

ADDITIONAL DESCRIPTORS: urban wildlife habitat

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Extensive 3-1/2 acre facility with paths, walkways, bridges designed to aid environmental education; energy-efficient pavilion for exhibits and classes

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
Community resources (donated) for project design, educational program development, and physical site implementation

F. HISTORY:

1) Principal originators:
Community college staff; community support group; students
2) Date and place of initiation:
Spring, 1974 (planning); fall, 1974 (implementation)
3) Funding sources utilized:
Private donations; corporate contributions; grants; fund-raising activities
4) Overall purpose:
Communicate to staff (college), community and students (college, K-12) how to incorporate wildlife habitats into urban situations, provide for wildlife essentials in everyday life situations and promote awareness in recycling, energy efficiency in project facilities

G. OBJECTIVES:

Initial Project Design and Development

The Environmental Learning Center Project has been developed through a dynamic interplay between various elements of the college (staff and students), members of the community who have become involved in many ways (contribution of funds, plant materials, structural materials, animals, labor and support), and various agencies at the local, state, and now the national level.

Overall Functions of the Environmental Learning Center

The John Inskeep Environmental Learning Center entered the implementation phase of its development in the spring of 1974, transforming the waste-water lagoons of the former Smuckers berry processing plant into a multi-purpose facility to be used for the enjoyment and education of the college students, elementary and high school students and teachers, outdoor education classes and interested community groups and individuals.

The John Inskeep Environmental Learning Center is a 3-1/2 acre park like area dedicated to the concept that environmental education is important to the community in many ways, now and in the years to come.

Providing working models of land reclamation; soil, water and wildlife conservation; natural interactions between flora and fuana and other ecological considerations, this site proclaims that the community can get together to preserve Oregon's unique blend of people and nature.

When the project is developed to its final stages it will accommodate at least the following functions:

1) Comprise a natural appearing setting for the study of ecological relationships in a pond environment.

2) Provide habitats for the breeding and protection of waterfowl and other wildlife, through appropriate landscaping and vegetation. For this purpose sections will be provided that restrict public access, except for observation from concealed positions.

3) Incorporate a variety of landscape and plant elements suitable for horticulture studies and wildlife habitat improvement.

4) Provide an environment for the growth, observation and sampling of aquatic plants and animals, waterfowl and other wildlife, in connection with biology and other curriculum studies.

5) Comprise a location for water quality studies including the assessment of pollution levels and their effects on the aquatic environment.

6) Become aesthetically attractive and provide art subjects through the shaping of the banks and construction of waterfalls, streams, bridges and other structures, all designed to preserve a natural appearance.

7) Combine aesthetic value with functional usefulness by constructing walkways and platforms to provide access for study sampling and general interest.

8) Contain a minimum of buildings or shelters for conducting illustrated lectures and tours, concealed observation or photography of wildlife, housing necessary equipment such as visual and audio-visual displays, and other instructional supplies. ANY SUCH STRUCTURES WILL BE DESIGNED SO AS TO PRESERVE AN OVERALL NATURAL APPEARANCE OF THE POND. This function includes the PAVILION OF THE ENVIRONMENTAL LEARNING CENTER.

9) Provide a living laboratory for conducting classes in ecology for elementary and high school groups, outdoor education classes and other groups.

10) Provide facilities for conducting teacher education courses in the environmental field.

11) Provide a recycle center to which visitors can bring recyclable goods. This center will be actively used to coordinate and manage a campus-wide materials reuse program at Clackamas Community College.

13) Provide access to the project for a wide range of physically and mentally handicapped people, through appropriate site features and structures.

H. MATERIALS:

1) Materials produced:
   Primary (K-3)--Outdoor Environmental Education Curriculum Guide specifically written for Environmental Learning Center.
   Secondary (4-6)--Same as above
   Other (7-12)--Same as above plus an additional handicapped guide
2) Free materials available:
   Brochures, pamphlets, etc.
3) Materials purchasable: None
4) New instructional materials being developed:
   Films for general outreach to schools regarding project description, etc.
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

Not yet distributed.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (being developed for distribution of materials)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Film and explanatory materials to be developed for this purpose

K. MATERIALS EVALUATION: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

1) Activities to date have been organized for the purpose of capital improvement to site (former industrial site reclamation), construction of facilities (bridges, accessways, shelters, etc.), development of energy efficient-alternative technology designed community meeting center exposition hall (the ELC Pavilion), and extensive landscape development.

2) Educational function implementation has been accomplished to date through extensive site tours, and specific visitation requests. Our formal curriculum guidebooks are being prepared now and will be distributed soon. Community college classes held with this facility as an outdoor laboratory, etc. have included biology, botany, art, ornamental horticulture, landscape design, and various community education programs.

3) The project is financed and managed (personnel used in development and maintenance) by a non-profit organization called the Association for Environmental Education in Clackamas County (multi-discipline citizen's organization).

4) Capital value of improvements to date in excess of $1 million... accomplished primarily by donation.

M. PLANS FOR THE FUTURE:

1) Implementation of all site features
2) Development of more extensive volunteers support organization to aid with tours, workshops and classes
3) Outreach to community to aid individuals and municipalities with open areas/property design to enhance and support wildlife and their activities

N. REPORT SUBMITTED BY: Gerald W. Herrmann
November 4, 1979

A. TITLE: THE ADVENTURES OF MINI-VOLTS AND WASTEY WATTS

B. DIRECTOR: Dr. John Jones
ENERGY & MAN'S ENVIRONMENT
0224 S.W. Hamilton-Suite 301
Portland, OR 97201
503/226-7131

C. DESCRIPTORS: Conservation education, energy education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
16-minute color/sound tape "The Adventures of Mini-Volts and Wastey Watts"

E. PRINCIPAL STAFF: 20

CONSULTANT SERVICES UTILIZED:
Educators from University of Oregon, Lane Community College; Oregon specialists in early childhood education, children's librarians, utility energy specialists

F. HISTORY:

1) Principal originators:
   Val Thoenig, energy consultant/writer
2) Date and place of initiation:
   Spring, 1978; Eugene, Oregon
3) Funding sources utilized:
   Eugene Water and Electric Board; Energy and Man's Environment
4) Overall purpose:
   To present critical energy concepts in a way that makes wise, safe and efficient use of energy a natural and positive experience

G. OBJECTIVES:

1) Teach young children the concepts of energy conservation and wise, safe use of energy
2) Involve children with a hands-on project that involves them personally in energy conservation--and, in turn, involves the family
3) To provide teachers of preschool, kindergarten and primary grades with a self-contained unit on energy conservation

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--"The Adventures of Mini-Volts and Wastey Watts" Energy Kit
2) Free materials available: None indicated
3) Materials purchasable:
   "The Adventures of Mini-Volts and Wastey Watts" kit for the classroom (sufficient for 30 students), $75; quantity prices for over 100 kits are available upon request.
4) New instructional materials being developed:
   Yes, grades K-12
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 75
2) Teachers adopting all of the materials: 75-100
3) Teachers using some of the materials: None indicated
4) Total students using all of the materials: 2500-3000
5) Totals stated are definite.
6) Selected schools utilizing program materials:

Crest Drive Elementary School
1155 Crest Drive
Eugene, OR 97405

Adams Elementary School
950 West 22nd Street
Eugene, OR 97405

McCornack Elementary School
1968 Brittany
Eugene, OR 97405

Educational Environments
Pre-School & Kindergarten
and Elementary School
5510 Fox Hollow Road
Eugene, OR 97405

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1 hour to full day)
   Evening Classes (offered through University of Oregon, division of Continuing Education)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Materials and training are offered through Energy and Man's Environment in 14 states, and are also available upon request in areas adopting the program.

K. MATERIALS EVALUATION:

1) Evaluator:
   Dr. Al Hughes, educator in science; teachers, parents, students
2) Pertinent published research on evaluation:
   PUBLIC POWER MAGAZINE (December 1978); copies of evaluation available upon request
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

Mini-Volts and Wastey Watts project was featured at Western Energy Conference, November 1978, San Francisco; Oregon Home Economics District meeting in Portland, April 1979; Oregon Educational Media Association "Idea Room," Eugene, October 1979; one-hour workshop, Oregon Association for Education of the Young Child, Marylhurst College, Lake Oswego, Oregon, November 10, 1979; 1-1/2 hour workshop, Oregon Environmental Education Association, November 17.

Prototype of "The Mini-Volts and Wastey Watts" energy kit was used by 50 schools (1300+ students), spring term, 1979 in Eugene, Oregon. The final version of the energy kit is now in national distribution. Each kit includes:

-30 story-coloring books
-30 energy dolls with magnetic energy-saving wardrobe
-30 watchey watts certificates
-"Teachers Guide" with 54 lesson plans
-Felt board set (all Mini-Volt characters)
-Two sets of flash cards ("Energy Sources"; "Safety in Use of Energy")

M. PLANS FOR THE FUTURE:

More programs for the educator who recognizes the need for energy education programs

N. REPORT SUBMITTED BY: Val Thoenig
Energy Consultant/Writer
November 9, 1979

Previous Directory Reference: 1976

ERIC Documents:

ED 133 192 Energy Education Materials Inventory (E.E.M.I.) Part One: Print Materials

ED 133 193 E.E.M.I. Part Two: Non-Print Materials, Part One

ED 133 194 E.E.M.I. Part Three: Non-Print Materials, Part Two

ED 133 195 E.E.M.I. Part Four: Kits, Games, and Miscellaneous Curriculum

ED 133 196 E.E.M.I. Part Five: Reference Sources

ED 159 072	The Energy and Environment Glossary, 1977
ED 166 009	An Interdisciplinary Teacher's Guide to Energy and Environmental Activities
ED 166 010	Section One-Sources of Energy
ED 166 011	Section Two-Uses of Energy
ED 166 012	Section Three-Conversion of Energy
ED 166 013	Section Four-Impacts of Energy
ED 166 014	Section Five-Limits of Energy
ED 166 015	Section Six-Future Sources of Energy
ED 167 449	Activities for the Classroom, Grades 1-3
ED 167 450	Activities for the Classroom, Grades 4-6
ED 167 451	Activities for the Classroom, Grades 7-9
ED 167 452	Activities for the Classroom, Grades 10-12
ED 167 453	The Energy Education Bibliography, an Annotated Bibliography of Key Resources for Energy and Conservation Education
ED 167 454	The Energy and Conservation Education Glossary
ED 167 455	The Energy Films Index, an Educator's Guide to Current Energy Films

A. TITLE: OMSI (OREGON MUSEUM OF SCIENCE AND INDUSTRY) ENERGY CENTER

B. DIRECTOR: Cynthia Weston
Oregon Museum of Science and Industry
4015 S.W. Canyon Road
Portland, OR 97221
503/248-5920

C. DESCRIPTORS: Conservation education, energy education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Energy information center; energy exhibits

E. PRINCIPAL STAFF: 5

CONSULTANT SERVICES UTILIZED: None indicated

F. HISTORY:

1) Principal originators:
   Oregon Museum of Science and Industry Department staff; Junior League of Portland
2) Date and place of initiation:
   1974
3) Funding sources utilized:
   Battelle Memorial Institute; Collins Foundation; Junior League of Portland; Pacific Power and Light; Portland General Electric
4) Overall purpose:
   To promote a greater public awareness of issues, concerns and alternatives regarding the use of all energy sources

G. OBJECTIVES:

Through information center, exhibits, classes, programs and outreach, provide educational, informational and referral services.

H. MATERIALS:

1) Materials produced: None indicated
2) Free materials available:
   Bibliographies and source lists on alternative sources of energy
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   None for distribution
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION: None indicated

J. TEACHER PREPARATION: None indicated

K. MATERIALS EVALUATION: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

The Energy Center is a place whose primary purpose is to promote a greater public awareness of issues, concerns and alternatives regarding the use of all energy sources.

Situated in a wing of The Oregon Museum of Science and Industry, the Energy Center contains exhibits and a library information office to answer questions and provide information about energy use and resources, energy conservation and alternative energy sources.

In an effort to make energy information readily available to the public, the Energy Center offers a variety of resources.

A key feature of the Energy Center is its reference library. Located in the Center, the library offers a complete and current source of books, periodicals and up-to-date abstracts pertaining to energy use, resources, conservation and alternatives. An energy information specialist is available to offer assistance, answer questions and locate additional information, resources or referrals. The library also offers numerous free brochures and supplemental videotapes and slides on energy-related topics. Library use is free and open to the public.

Located directly below the Energy Center office is a display of current exhibits which demonstrate various aspects of energy performance. Visitors can see how solar collectors work, determine the effectiveness of insulation materials and view models of where and how energy is produced. A popular exhibit is the energy computer. Participants can get answers to various energy questions by operating a computer terminal.

An additional exhibit located near OMSI is TERA One, a solar-heated, energy-conserving experimental residence. Visitors can tour TERA One and get a firsthand look at an applied form of energy conservation.

Along with adult education programs, the Energy Center coordinates tours and workshops for visiting school groups. Hands-on labs, classes, tours of TERA One and demonstrations enable students to learn through participation.

A suitcase program in which OMSI instructors take energy demonstrations out to schools is also part of the Energy Center's educational programs.

Throughout the year numerous programs and events including conferences and workshops on energy topics are sponsored by the Energy Center. An ongoing project is the evening adult education programs. Scheduled monthly, the programs feature key speakers and topics of interest to the general public.

M. PLANS FOR THE FUTURE: None indicated

N. REPORT SUBMITTED BY: Cynthia Weston
November 21, 1979

A. TITLE: "ENERGY AND MAN'S ENVIRONMENT"
OREGON PROGRAM

B. DIRECTOR: Daniel Brent Grimes
10320 Southwest Paulina Drive
Tualatin, OR 97062
503/638-5814

C. DESCRIPTORS: Energy education.

D. HEADQUARTERS: 0224 Southwest Hamilton
Portland, OR 97201
503/226-7131

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Model school sites, both elementary and secondary.

E. PRINCIPAL STAFF: 20

CONSULTANT SERVICES UTILIZED:
Representatives from business, industry, government, and civil groups have been consultants, along with educators, in developing and implementing E.M.E. curriculum materials and teacher inservice training programs.

F. HISTORY:

1) Principal originators:
Energy and Man's Environment Staff from the national headquarters.
2) Date and place of initiation:
1973, Beaverton, OR.
3) Funding sources utilized:
Funds are available from the national headquarters which are raised from contribution from business/industry and government agencies. The Oregon E.M.E. program receives approximately $75 - $100,000 yearly.
4) Overall purpose:
Within the state of Oregon, to conduct teacher inservice training programs resulting in helping teachers and school districts. Implement Energy Education curriculum into existing instructional programs.

G. OBJECTIVES:

To provide teacher inservice training in Energy Education throughout the state.
To provide teachers with Energy Education curriculum materials.
To assist teachers and schools implement Energy Education in the district, school, and/or classroom setting.

H. MATERIALS:

1) Materials produced:
   Catalog available from Program Director.
2) Free materials available: None listed.
3) Materials purchasable: None listed.
4) New instructional materials being developed:
   K-12 - Natural gas education lesson plan units, solar education less plan units, alternative energy sources education lesson plan units.
5) Materials anticipated for development: None listed.
6) Commercial association: None.

I. IMPLEMENTATION:

1) Schools using entire set of materials: 300 statewide
2) Teachers adopting all of the materials: 4,000 statewide
3) Teachers using some of the materials: 6,000 statewide
4) Total students using all of the materials: 125,000 statewide
5) Totals state are estimated.
6) Selected schools where the program materials are being used:

Beaverton School District
Attn: Harold Wik
Box 200
Beaverton, OR 97005

Portland School District
Cleveland High School
Attn: Dick Donin
3400 South East 26th Street
Portland, OR

Eugene Public Schools
Attn: Al Hughes
South Eugene High School
400 East 19 Avenue
Eugene, OR 97401

Medford School District
Attn: Dr. R. Mackey
500 Monroe
Medford, OR 97501

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshops (6-30 clock hours)
   Summer Institute (40-60 clock hours)
   Evening Classes (3 hour sessions)
   A variety of conferences, workshops, seminars and consultant sessions.

5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: Yes

K. MATERIALS EVALUATION:

1) Evaluator:
Selected teachers, representatives from business/industry, government, labor, and civic organizations.
2) Pertinent published research on evaluation: None listed.
3) Unpublished research summary: None listed.

L. SUMMARY OF ACTIVITIES TO DATE:

Annual reports are available from the Program Director.

M. PLANS FOR THE FUTURE:

Workshops for students
Workshops for parents
Curriculum materials for students
Curriculum materials for parents

N. REPORT SUBMITTED BY: Dan Grimes
September 9, 1979

A. TITLE: BRISTOL BOROUGH K-12 ENVIRONMENTAL EDUCATION PROJECT

B. DIRECTOR: Dominick A. Potena
420 Buckley Street
Bristol, PA 19007
215/788-8461

C. DESCRIPTORS: Environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
55-acre Environmental Center

E. PRINCIPAL STAFF: 80

CONSULTANT SERVICES UTILIZED:
Yes, to develop in-service activities and to prepare independent evaluations

F. HISTORY:

1) Principal originators:
   Mr. Potena; Dr. Zotos
2) Date and place of initiation:
   July, 1977
3) Funding sources utilized:
   ESEA Title IV-C
4) Overall purpose:
   To implement environmental education into the K-12 curriculum

G. OBJECTIVES:

1) To establish an environmental education center
2) To encourage community participation

H. MATERIALS:

1) Materials produced:
   Winter Activities K-12; in-service activities for professional staff
2) Free materials available:
   Information booklet
3) Materials purchasable: None indicated
4) New instructional materials being developed: None indicated
5) Materials anticipated for development:
   Possibly a K-12 curriculum guide
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 4
2) Teachers adopting all of the materials: 100
3) Teachers using some of the materials: 20
4) Total students using all of the materials: 1,000
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Warren Snyder Elementary School
420 Buckley Street
Bristol, PA 19007

St. Ann's School
Logan Street
Bristol, PA 19007

Bristol Junior/Senior High School
Wilson Avenue
Bristol, PA 19007

St. Mark's School
Radcliffe Street
Bristol, PA 19007

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (45 minutes to 3 hours)

K. MATERIALS EVALUATION:

1) Evaluator:
   Project KARE, Blue Bell, Pennsylvania
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

The Bristol Borough School District is involved in a comprehensive K-12 environmental education project to develop, pilot and install an interdisciplinary environmental studies program in the district. A 55-acre tract of land owned by the district is being utilized to serve as an Environmental Studies Center. The Center will afford students an opportunity to perform on-site activities and experience an actual "hands-on" approach to studying the environment. Activities are designed to include a wide variety of subject areas, thus introducing an interdisciplinary approach to environmental studies. Participants are involved in such activities as collecting and identifying leaves, creative writing, quiet time, identifying insects, eco-art, photography, plane table mapping, and soil analysis.

Participation in the program includes students, teachers and parents in public and parochial schools in the district.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Dominick A. Potena

September 7, 1979

A. TITLE: LOWER MILFORD OUTDOOR CONSERVATION AND EDUCATION CENTER

B. DIRECTOR: John Leeser
Lower Milford Elementary School
R.D. #2
Coopersburg, PA 18036
215/965-4095

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:

1) The lower Milford Outdoor Conservation and Education Center includes on its site a forest, shrubs, ferns, many wildflowers, a marsh and a stream.
2) Since 1972 the fifth graders have blazed a trail through the center, researched various plant and tree species, prepared reports and recorded speeches on tape. The speeches coincide with a series of wooden markers that identify various plants and trees along the trail.
3) All one needs to tour the lower Milford site is the tape recorder. A person simply starts the recorder at the trail's beginning and receives a complete guided tour of the outdoor center by following the tape's instructions.
4) An integral part of this conservation center is the outdoor classroom. This facility arranged in amphitheater style can accommodate about 50 pupils on its log seats. The classroom area was constructed by fifth-grade pupils. It is a place where all classes in the school can meet to work in any curricular area. Being surrounded by a thick stand of mature trees this is a very popular location during the warm days of late spring.
5) Two additional facilities have recently been developed within the lower Milford Conservation Center. One of these is a pond suitable for aquatic studies. This nicely compliments the swamp and the stream. A bird sanctuary is the other new addition. Feeding stations have been constructed and regular observation periods have yielded over 30 different species that frequent the area during the winter season.
6) Student groups from other schools as well as community groups have utilized this site since its beginning. Inquiries and visitation are invited. Information can be obtained by contacting John H. Leeser, fifth-grade teacher, or John R. Yeager, principal, at the above address, or at (215) 282-3200.

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
Middle school science teacher in the beginning

F. HISTORY:

1) Principal originators:
   John H. Leeser, fifth-grade teacher; John Yeager, principal
2) Date and place of initiation:
   September, 1972; Lower Milford School
3) Funding sources utilized:
   P.T.A.
4) Overall purpose:
   We use the environmental center for bird study, an ecology unit, plant, tree and wildflower study, as well as varied art and primary science projects.

G. OBJECTIVES:

1) To study the flora and fauna of the center
2) To understand their role in the balance of nature
3) To teach wise conservation of natural resources

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--Tapes providing a guided tour of the outdoor center, describing various trees, plants, etc.
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 1
2) Teachers adopting all of the materials: 1
3) Teachers using some of the materials: 7
4) Total students using all of the materials: 30
5) Totals stated are definite.
6) Selected schools utilizing program materials:

Coopersburg Elementary School
Coopersburg, PA 18036

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Our latest activities include hand feeding the black-capped chickadees, part of our bird study unit.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: John Leeser
September 29, 1979

Previous Directory Reference: 1976

A. TITLE: SOUTH WESTERN ENVIRONMENTAL EDUCATION PROGRAM

B. DIRECTOR: Thomas F. Clough
Emory H. Markle Intermediate School
225 Bowman Road
Hanover, PA 17308
717/632-4600

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education

ADDITIONAL DESCRIPTORS: Fresh H_2O aquatic studies

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Our entire environmental area (pond, stream, marshes, woodlots, fields) are available for visitors. During the school year (especially fall and spring), classes will be active and may be viewed by visitors.

E. PRINCIPAL STAFF: 7

CONSULTANT SERVICES UTILIZED: None

F. HISTORY:

1) Principal originators:
   Thomas F. Clough; Mike Hampton
2) Date and place of initiation:
   1971; South Western High School, Hanover, Pennsylvania
3) Funding sources utilized:
   CETA (summer); ESEA Title IV-B (1 year for teaching materials)
4) Overall purpose:
   To initiate an awareness and an appreciation for the delicacy of the environment.

G. OBJECTIVES:

1) Appreciation of the delicacy and beauty of the environment
2) Motivate students toward school
3) Reinforce what is taught in the classroom

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--Teacher's Handbook for Environmental Education
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed:
   Yes, primary
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 7
2) Teachers adopting all of the materials: 6
3) Teachers using some of the materials: 6
4) Total students using all of the materials: 1,500
5) Totals stated are estimated
6) Selected schools utilizing program materials:

South Western High School
220 Bowman Road
Hanover, PA 17331

Brookside Elementary School
Hanover, PA 17331

Emory H. Markle Intermediate School
225 Bowman Road
Hanover, PA 17331

Baresville Elementary School
Hanover, PA 17331

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (one day)
   Summer Institute (3 days--college credit)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

1) Development of a 160-acre farm for environmental studies (pond, stream, marsh, woodlots, fields, etc.)
2) Development of four (4) full-time environmental courses (2 middle school; 2 high school)
3) Incorporation of other subject areas into outdoor studies
4) Development of curriculum for elementary grades
5) Sponsoring county-wide in-service days
6) Involving the community both by slide talks to various civic groups and having them visit the nature area
7) Having the NACD-Allis Chalmers Conservation Teacher of the Year 1979 for the State of Pennsylvania on our staff (Thomas F. Clough)

M. PLANS FOR THE FUTURE:

1) College credit course
2) Development of nature center building

N. REPORT SUBMITTED BY: Thomas F. Clough

September 28, 1979

A. TITLE: "MILLS, MOONS, AND MY WORLD"

B. DIRECTOR: Mr. Allen D. Baker
4773 Ft. Loudon Road
Mercersburg, PA 17236
717/328-2146

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Tuscarora School District
P.O. Box 149
Mercersburg, PA 17236
717/328-3127

E. PRINCIPAL STAFF: 20

CONSULTANT SERVICES UTILIZED: None

F. HISTORY:

1) Principal originators:
   Dr. Andrew L. Sim, Jr.
2) Date and place of initiation:
   March, 1977; Mercersburg, Pennsylvania
3) Funding sources utilized:
   ESEA Title IV-C
4) Overall purpose:
   Bring students, staff and community together solving realistic environmental and other educational problems

G. OBJECTIVES:

1) At least 95 percent of the students attending school in the Tuscarora School District will experience a visit to at least one site within the school district that is, in some way, involved in the environment. As many as 5 percent may not benefit from such an experience because of absence from school.
2) At least 75 percent of the students will benefit from an opportunity to meet with and relate to at least one member of the community not part of the regular school staff. 25 percent will not benefit from their experience because of possible logistical problems.
3) 100 percent of the students participating in a resident environmental education program will have an opportunity to interact with community volunteers as instructors and/or counselors in living quarters.
4) At least 50 percent of the students in grades K through 8 will evidence an increase in the environment as evidenced by teacher judgment between the start of the project and the conclusion of the 1977-78 school year. 50 percent of the students may not evidence any measurable change in their environmental awareness.

5) At least 90 percent of all students participating in the resident experience will evidence a greater understanding of the environment after the experience as evidenced by a student survey to be administered before and after the experience. 10 percent will evidence no change.
6) At least 90 percent of the students who participate in one or more activities related to environmental projects, such as preparation of nature trails at their respective schools, will evidence an increased understanding in environmental awareness or evidence by teacher judgment. 10 percent will evidence no appreciable increased understanding.
7) Peer group relations of at least 75 percent of the students who participate in the resident environmental part of the program will improve after this experience as evidenced by teacher observations and parent questionnaires. 25 percent will show no measurable improvement as evidenced by the teacher observations and parent questionnaires.
8) 85 percent of the students who participate in the resident experience will feel happier about their involvement in their own environmental program as evidenced by a student survey after the experience. 15 percent will not feel any difference.
9) 60 percent of the students who are taught by the "discovery approach" method in their own school settings will feel happier about their involvement after exposure to their approach than before it as evidenced by student survey. 40 percent will not evidence any noticeable change of attitude.

H. MATERIALS:

1) Materials produced: None
2) Free materials available: None indicated
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION: None

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Third and ninth graders visited Cowans Gap State Park for an environmental education program put on by park personnel and our own professional staff. In addition, ninth graders have had an opportunity to explore caverns. Sixth graders had a week-long environmental education camping experience where their week was surrounded by environmental awareness and educational experiences.

M. PLANS FOR THE FUTURE:

Expand third and ninth-grade environmental education experience to include geology and spelunking as well as archaeology and ecosystems.

N. REPORT SUBMITTED BY: Dr. Ted F. Rabold
Assistant Superintendent, Coordinator
October 10, 1979

A. TITLE: BEAR RUN NATURE RESERVE

B. DIRECTOR: Paulette Johnson
Box 97
Mill Run, PA 15464
412/329-8890 or 8501

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Natural history walks (date and times vary)

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: None

F. HISTORY:

1) Principal originators:
   Paul Weegman; Paulette Johnson
2) Date and place of initiation:
   April, 1978; Bear Run Nature Reserve
3) Funding sources utilized:
   Western Pennsylvania Conservancy
4) Overall purpose:
   To promote a better understanding of the whole environment through the natural environment

G. OBJECTIVES:

1) Awareness in the natural environment
2) Knowledge of the integral parts of the environment
3) Development of preservation or efficient management practices of the natural environment

H. MATERIALS:

1) Materials produced: None indicated
2) Free materials available:
   Seasonal schedule of events; trail maps of the reserve
3) Materials purchasable: None indicated
4) New instructional materials being developed: None
5) Materials anticipated for development:
   Self-guiding trail booklet
6) Commercial association: None

I. IMPLEMENTATION: None

J. TEACHER PREPARATION: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

1) Natural history walks
2) Bird walks
3) Workshops (several a year--topics vary)
4) Cross-country ski program
5) Guided winter ski

M. PLANS FOR THE FUTURE:

Citizen ski races

N. REPORT SUBMITTED BY: Paulette Johnson
October 5, 1979

A. TITLE: ELEMENTARY AGRICULTURE

B. DIRECTOR: Sonia M. Shaner
Eastern Lancaster County School District
309 Diller Avenue
New Holland, PA 17557
717/354-4031

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education

D. HEADQUARTERS: Union Grove School
R.D. #1
East Earl, PA 17519
215/445-5041

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Depending on the lesson which is being taught, visitors could attend; example, sheep shearing

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED:
Pennsylvania Game Commission

F. HISTORY:

1) Principal originators:
   Dr. Robert Herr; administrators
2) Date and place of initiation:
   1967; Eastern Lancaster County Schools
3) Funding sources utilized:
   Title I (initially); school district
4) Overall purpose:
   Maintenance and improvement of the quality of our environment. An emphasis is placed on four main areas: safety around the home and farm; conservation of soil, water and natural resources; sanitations; and agriculture occupation awareness

G. OBJECTIVES:

1) Teach Pennsylvania Game Commission Hunter Safety Program
2) Awareness of common snakes in Pennsylvania
3) Awareness of good safety habits
4) To develop a basic understanding of approved practices concerning home projects and project book recordkeeping
5) To provide each student the opportunity to have their home water supply tested for purity
6) To enable students to explore the field of agriculture careers through field trips
7) To teach conservation of our natural resources
8) To create awareness of the world food problem

9) To create awareness of interrelationships of living and non-living organisms in our environment
10) To provide knowledge of livestock production and judging
11) To develop an understanding of vegetable and crop care

Target Audience

Classes are held with all sixth-grade students in the elementary schools, 130 students (one-half of total enrollment) of the seventh-grade, and two classes per week K-5 classes.

H. MATERIALS:

1) Materials produced: None indicated
2) Free materials available:
   Various lesson plans
3) Materials purchasable: None indicated
4) New instructional materials being developed: None indicated
5) Materials anticipated for development: None indicated
6) Commercial association: None indicated

I. IMPLEMENTATION: None indicated

J. TEACHER PREPARATION: None indicated

K. MATERIALS EVALUATION: None indicated

L. SUMMARY OF ACTIVITIES TO DATE: None indicated

M. PLANS FOR THE FUTURE:

Presently expanding into K-5 grades in "Food for America" and "Living in Your Environment." This is taught on an interest basis to those K-5 classes who apply.

N. REPORT SUBMITTED BY: Sonia M. Shaner
September 30, 1979

Previous Directory Reference: 1976

A. TITLE: SCHUYLKILL VALLEY NATURE CENTER

B. DIRECTOR: Richard L. James
8480 Hagy's Mill Road
Philadelphia, PA 19128
215/482-7300

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Electronic guided handicapped trail; discovery room; 7 miles of trails; 5,000 volume library; 800 volume Teaching Resource Center

E. PRINCIPAL STAFF: 15

CONSULTANT SERVICES UTILIZED: None

F. HISTORY:

1) Principal originators:
   Eleanor and Margaret Houston
2) Date and place of initiation:
   July 1, 1965
3) Funding sources utilized:
   Foundation and service funds
4) Overall purpose:
   Urban environmental education for the five-county Philadelphia region

G. OBJECTIVES:

1) Provide a broad base program of environmental education for schools, general public, teachers and graduate schools
2) Act as a disseminator for environmental education materials and programs
3) Provide a 500-acre "natural area" within the City of Philadelphia

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--Energy in the City-curriculum guides; EEPPS (inner-city curriculum guide to city ecology); PROJECT TREND-fourth grade-water, sixth grade-survival, fifth grade-forest
   Secondary (7-12)--Repeat EEPPS, Energy, Ecology for Handi-Handicapped (elementary and secondary)
   Other--Earthwatch-26 week, 30-minute TV show on environmental concerns and natural history in cooperation with CBS; graduate programs in environmental education for Penn State University, Temple University and Beaver College

2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed:
    Text and curriculum guides, K-12
5) Materials anticipated for development:
    More curriculum guides in environmental education for the handicapped; same for senior citizen continuing education
6) Commercial association: None

I. IMPLEMENTATION:

There are approximately 300 schools using various materials produced for them by Schuylkill Valley Nature Center. There are 14 different sets.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshop (18 hours)
    Summer Institute (75 hours)
    Evening Classes (9-39 hours)
    Other--workshop and courses (3-75 hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: Yes

K. MATERIALS EVALUATION:

1) Evaluator:
    Acclimatization Experience Institute, Temple University
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

School Themes

Scheduled group field trips for school children are led by staff teacher-naturalists. Lessons teach students to understand relations between living things and their environments. Themes for the student groups may have the same basic subject matter but vary in intensity and complexity with the ages involved. For example, the primary age group may work with "What's Alive," while elementary students get more involved with "Adapting for Life." Outdoor orientation to the theme using the discovery approach is emphasized. Sessions end with a brief review and a chance to browse in the natural history store and museum. Staff members are available to lead follow-up trips in the students home or school neighborhoods. Program reaches children from kindergarten through high school.

Special School Programs

Each year more of the Nature Center's programming with individual schools occupies the Center's school schedule. This year the following programs will be conducted:

1) Environmental Education Program for Philadelphia Schools--Using grants made available from the William Penn Foundation and the Pew Memorial Trust, the Center is launching a three-year program aimed at integrating environmental education into Districts Four and Five of the Philadelphia School District. The program includes summer workshops for 150 teachers and year-long workshops, seminars and individualized support in helping each teacher in the program become a competent environmental educator for the classroom and the school in which the teacher works.

2) Academically Talented Program--Academically talented children in 18 schools (grades 4-12) of the Philadelphia School District visit the Nature Center five times throughout the school year. This year's theme is "energy."

3) Beaver College-Field Biology--One semester each year, the undergraduate biology program of Beaver College offers a field biology and ecology course. Much of the field work is conducted at the Center with the assistance of the Center's staff. Programs in terrestrial and aquatic biology are conducted over a six-week period.

4) Widener College--A one-semester program in ecology and field biology at the Widener campus for undergraduates. The program will focus on a complete laboratory experience for a 15-week period.

5) Temple University-Aquatic Ecology-740-- In addition to the normal instructional programs conducted at Schuylkill Valley Nature Center, Temple introduced Aquatic Ecology 740 in the fall semester at Schuylkill Valley Nature Center. A three-credit graduate program that was formulated from a syllabus prepared by the Nature Center staff.

6) High School Trainees--Each semester, high school students from area high school alternative programs work at the Center. Their program is similar to our teacher-naturalist program. It is, of course, condensed in format.

Summer Programs

1) Summer School, Day Camps and Recreation Departments--Scheduled trips for children. Lessons teach children to understand relations between living things and their environments. Orientation similar to winter school themes with shift in seasonal emphasis.

2) Philadelphia Department of Recreation--This program is a funded summer program that has a specific theme each year.

3) Scout Programs--Are usually handled on an individual basis. Some are centered on badge programs, others merely filling the role of a field trip.

4) Whitemarsh Recreation Department--Schuylkill Valley Nature Center's longest running summer program entered its eleventh year in 1979.

SPECIAL ENVIRONMENTAL EDUCATION

Consortium of Senior Citizens Groups

Our senior citizen programming is expanding at a very satisfying rate. This year grants from the Philadelphia Corporation for Aging and the Colonial Mutual Group will allow Schuylkill Valley Nature Center to offer activities and programs to senior citizen groups all around the Philadelphia area. The programs are available both here at the Center and at centers throughout the Delaware Valley.

Special Programs in Environmental Education for Schools

Grants from the Widener Memorial Foundation in Aid of Handicapped Children and the National Science Foundation have allowed Schuylkill Valley Nature Center to greatly expand its program in environmental education for physically handicapped children and the teachers of handicapped children.

1) Widener Memorial Foundation in Aid of Handicapped Children--The current Widener Memorial grant has allowed the construction of ramps in all sections of the main building at the Center. This construction, completed during the summer of 1978, makes the entire public section of the building handicapped accessible.

   The bulk of the Widener Memorial grant establishes a three teacher training program similar to our EEPPS program which includes summer graduate training, year-round workshops, staff visitations to school sites and class visits to Schuylkill Valley Nature Center to use the Widener facilities. The grant also allows the Center to expand its collection of materials for environmental education for the handicapped in our Teaching Resource Center.

2) The National Science Foundation-- A three-year grant from the National Science Foundation has two major objectives.

   First, the project will develop and field test a model of a field-oriented program for the science of ecology for physically handicapped high school students. Students involved in the program will be actively utilizing the natural world while learning basic ecological concepts.

The second objective of the program focuses on teaching teachers of the handicapped the same basic elements of ecology and how to work with their students in the field-oriented program. Thus, they will gain more confidence in extending to their students opportunities in a field-ecology course of study.

Teacher Workshops

Both in-service and weekend workshops are offered throughout the year. The programs are varied in mood and content. Their main purpose is to reinforce and expand teacher backgrounds in subject matter, methods and new materials. Both the National Science Foundation and Widener program support such programs.

School Themes

Using the Widener Trail as the central beginning point, groups using Schuylkill Valley Nature Center's facilities can experience lessons in every phase of environmental education, from aquatic ecology to sensory experiences. There is even an organic gardening program available next to the Widener Trail. The themes for handicapped school groups are the same as for other school groups. As always, special request programs are always available.

Widener Trail--Completed in 1975 through a grant from the Widener Memorial Foundation in Aid of Handicapped Children, the all-weather surface trail is available to any handicapped individual. Its unique FM message zone system allows recorded messages to be heard on special receivers.

The trail's other unique physical features include raised curbing replacing cumbersome handrails and posts. There is a deck built over a pond for aquatic studies, and the wildlife blind at the end of the trail is in a heavily managed wildlife area. Several natural surface trails connect with the Widener Trail and allow visually and other handicapped groups complete freedom of movement around the Center.

Along the trail are special facilities such as an organic garden and the Challenge Course.

Challenge Course

This year the Widener Trail added to its facilities a challenge course designed for the physically handicapped. It includes a bosun chair that lifts its passengers 40 feet up into a tree. A zip wire and many other challenges await the user. Its purpose is building confidence and taking advantage of group interaction for all of the users of the trail.

M. PLANS FOR THE FUTURE:

1) More work with neighborhood groups
2) Continued work with academically talented groups
3) Expanded programs for the handicapped

N. REPORT SUBMITTED BY: Richard L. James
August 31, 1979

Previous Directory Reference: 1976

A. TITLE: ENERGY STEWARDSHIP PROGRAM

B. DIRECTOR:
Mrs. Denise Olczak
Lakeview School District
R.D. #1, Box 173
Stoneboro, PA 16153
412/376-7135

C. DESCRIPTORS: Energy education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Lakeview Energy Center; International truck filled with books, audio-visual and free materials on a wide spectrum of energy topics

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED:
Project KARE staff (Project KARE is a federally-validated environmental education program)

F. HISTORY:

1) Principal originators:
   Lakeview School District administrators and teachers; person responsible for writing the grant proposal was Mrs. Jean Mowry, curriculum coordinator
2) Date and place of initiation:
   September, 1977
3) Funding sources utilized:
   Title IV-C, 1977-1980
4) Overall purpose:
   The Lakeview Energy Stewardship Program is a grassroots effort to teach community adults and students the facts, concepts and interrelationships among energy, economics, and the environment. In doing so, people will become more aware of the need for energy stewardship to include conservation, sound utilization and alternative energy sources.

G. OBJECTIVES:

1) To educate students to become more aware of the need for energy stewardship including energy conservation, sound energy utilization, and alternative energy sources.
2) To teach community adults and students facts, concepts and interrelationships among energy, economics and the environment.
3) To develop in teachers, students and the community the planning, implementation and management skills necessary for an action program in energy stewardship.
4) Concomitantly, to assist the community to practice energy conservation measures.
5) To motivate the community to participate in learning activities related to the development of energy stewardship in students.

H. MATERIALS:

1) Materials produced:

Energy Stewardship Program Minicourses

Title	Grade Level(s)	Subject or Class Designation	Areas Evaluated
Sunbeams At Work	K	Interdisciplinary	Cognitive
Human Fitness to Conserve Earth's Energy	1-4	Interdisciplinary	Cognitive
Movement is Energy*	1-3	EMR	Cognitive
Here Comes the Sun	1-3	EMR	Cognitive
Energy: Where It Comes From, Where It Goes, How to Conserve It	2	Science	Cognitive
Energy Awareness and Related Problems*	4-6	Gifted	Affective
Winter Fun Using People Power*	3-4	Physical Education	Cognitive
Food, Nutrition and Energy	4	Health	Cognitive
Heat and Related Terms and Concepts*	4-5	Science	Cognitive
Run For Your Life*	6	Physical Education	Cognitive
Sun Trek*	3-4	Reading	Cognitive
Energy Conservation Is Kid's Stuff	6	Health	Cognitive
Safeguard Your Body's Future by Eating Right Now	6	Interdisciplinary	Cognitive
Energy from the Sun	6	Science	Affective/ Cognitive
Meet the Energy Crowd	6	English	Affective/ Cognitive
Gasoline--A Pain in the Tank	7-8	Title I Reading-Math	Affective/ Cognitive
Stay Within Your Boundaries*	7-8	Title I Reading-Math	Affective/ Cognitive
Food for Writing Thoughts	7-8	English	Affective/ Cognitive
Over A Barrel	7	Social Studies	Cognitive
Saving Energy at Home*	9-12	Home Economics	Cognitive
Target Your Energy into Archery	9-12	Physical Education	Cognitive
Energy Conservation at Home	9-12	General Math	Cognitive
Catch the Sun*	9-12	General Science	Affective/ Cognitive
Let's Put the Sun to Work	10-12	Physics	Cognitive
Energy Related Model Legislature*	10-12	Social Studies	Affective/ Cognitive

*Those minicourses which are starred are currently available. All others will not be ready for distribution until late spring 1980.

2) Free materials available:
   Brochure describing each of the above projects in greater detail
3) Materials purchasable:
   All of the energy minicourses listed above can be purchased, although only 11 are ready at the present time. The approximate cost of each is $10.
4) New instructional materials being developed:
   All those listed above
5) Materials anticipated for development:
   -Booklet describing community participation in the form of workshops, seminars and festivities
   -Booklet describing 15 mini projects including students in energy education
6) Commercial association: None

I. IMPLEMENTATION:

Project is currently only developmental; applying for state validation in November 1979.

1) Schools using entire set of materials: None indicated
2) Teachers adopting all of the materials: None indicated
3) Teachers using some of the materials: 50
4) Total students using all of the materials: 1,800
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Lakeview High School
R.D. #1
Stoneboro, PA 16153

Oakview Elementary School
R.D. #1
Stoneboro, PA 16153

Stoneboro Elementary School
R.D. #1
Stoneboro, PA 16153

Gilmore Elementary
R.D. #1
Stoneboro, PA 16153

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1 day)
   Evening Classes (3 hours for 2 evenings)

K. MATERIALS EVALUATION:

1) Evaluator:
   Project KARE
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary:
   Available in November as a final report of two years of evaluation data

L. SUMMARY OF ACTIVITIES TO DATE:

1) 15 energy minigrant projects occurred K-12
2) 25 energy minicourses--minimum of one week, maximum of six weeks; complete with goals, objectives, procedure, materials needed, time required, student handouts, etc.
3) 12 adult workshops on various topics of energy to include conservation, alternatives and use of leisure time
4) community projects include recycling drives, winter carnival, energy exposition and various community public relations programs
5) mobile energy center which houses books, magazines, audio visual materials, displays and free handouts on a wide spectrum of energy topics to include conservation, alternative sources, lifestyles and use of leisure

M. PLANS FOR THE FUTURE:

Dependent upon whether or not the project is validated.

N. REPORT SUBMITTED BY: Denise Olczak
September 5, 1979

A. TITLE: BASSE A. BECK ENVIRONMENTAL EDUCATION CENTER

B. DIRECTOR: Position vacant
Basse A. Beck Environmental Education Center
Shikellamy State Park, Bridge Avenue
Sunbury, PA 17801
717/286-6856

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Museum with exhibits on the Susquehanna River, its influences on people, and environmental issues

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED:
Program developed by Department of Environmental Resources, Pennsylvania; exhibits in museum designed and constructed by MarkeTechs, Inc., York, Pennsylvania

F. HISTORY:

1) Principal originators:
   Pennsylvania Department of Environmental Resources
2) Date and place of initiation:
   1975 (idea was originated)
   1978; Shikellamy State Park
3) Funding sources utilized:
   State funds
4) Overall purpose:
   To educate all park visitors about the world around them, to help them gain a better understanding of Pennsylvania's natural resources, and the solutions to its environmental problems.

G. OBJECTIVES:

1) Provide for learning experiences in environmental education leading to increased awareness, appreciation, understanding and skills necessary for the preservation and wise use of Pennsylvania's natural resources.
2) Assist the citizenry of Pennsylvania to better understand the role of the park system and the Department of Environmental Resources.
3) Provide assistance to the public-at-large in implementing environmental education programs to study and provide plausible solutions to local community problems.

4) Assist local school systems to implement a problem-solving environmental education curriculum that will involve the resources of the local community, the school system itself, local government, civic organizations, and businesses and industry.

5) Provide training programs for teachers in environmental education to help teacher use park resources more effectively for environmental learning.

6) Provide environmental education programs for the adult community in such areas, but not limited to: energy conservation, natural history, ecology, park resources management, Department of Environmental Resources functions, environmental issues, problems and their solutions and conservation education.

7) Provide consultant services to schools for the development of environmental education materials and environmental study areas.

8) Provide facilities for environmental education resources center where students can carry out environmental learning experiences and research.

9) Serve as a center for environmental information for dissemination to the public at large.

H. MATERIALS:

1) Materials produced:

Primary (K-6)--The lesson plans presently available through our center have actually been produced by Nolde Environmental Education Center, Bureau of State Park, Department of Environmental Resources. They cover a wide range of subjects related to the environment and are available for grades K-12.

Other--Leaflet Information Series (produced by Bureau of State Parks, Environmental Education and Interpretation Section): Pennsylvania Snakes, Poison Ivy, Animal Tracks, Natural Dyes, Guide to Common Freshwater Animals, The Environmental Interpretor (newsletter).

2) Free materials available:

The above materials are available in small quantities free of charge

3) Materials purchasable: None indicated

4) New instructional materials being developed:

Environmental lesson plans and interpretive publications and guides for all age levels

5) Materials anticipated for development:

Slide/tape programs on environmental subjects and interpretive displays

6) Commercial association: None

I. IMPLEMENTATION: None indicated

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (1 day to weekend)

K. MATERIALS EVALUATION: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

Our program is just getting started, and many aspects are still in the planning stages. Most of our activity up to this point has been in doing environmental education programs for school groups visiting the park. We feel that we are filling in the gaps in environmental education that the teacher is unable to.

M. PLANS FOR THE FUTURE:

1) Teacher workshops and in-service programs
2) Production of environmental education materials for use with school groups
3) Interpretive publications and guides for all age levels
4) Development of slide/tape programs and interpretive displays
5) A well-rounded series of environmental education programs for all age levels and groups

N. REPORT SUBMITTED BY: Sarah E. Hopkins
Environmental Interpretation Technician
September 19, 1979

A. TITLE: SECURITY THROUGH HOMESTEADING

B. DIRECTOR: James T. Bullock
Warrior Run High School
R.D. #1
Turbotville, PA 17772
717/649-5166

C. DESCRIPTORS: Environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED:
Project KARE aided in teacher workshops, evaluation designs, etc.

F. HISTORY:

1) Principal originators:
James T. Bullock
2) Date and place of initiation:
Summer, 1974; Warrior Run High School
3) Funding sources utilized:
Title IV-C
4) Overall purpose:
The goals of "Security Through Homesteading" involve the establishment and implementation of a K-12 environmental studies curriculum which is problem-centered, process-based, and utilizing a 55-acre environmental center located on the school campus. The objectives are to strive to have students become aware of their individual role in the land stewardship concept; to learn facts, concepts, and cognitive interrelationships regarding land stewardships, environmental studies, and communal pressure; to achieve both intellectual and physical skills/competencies needed for establishing an environmental center. Also, teachers will be exposed to, and adapt, student-centered teaching techniques and will gain confidence in such techniques by their own utilization. A last objective is to involve community persons in the school curriculum and to have them involved as co-learners in various environmental problems and issues. This project will be evaluated by an external evaluator.

G. OBJECTIVES:

By participating in this program students will:

1) become more aware of their individual role in the land stewardship concept;
2) learn facts, concepts, and cognitive interrelationships regarding land stewardships, environmental studies, and communal pressure;

3) achieve both intellectual and physical skills/competencies needed for the establishing of an environmental center which will be designed to lend itself to an understanding of land stewardship and the developing of sound value systems concerning environmental issues and problems.

By participating in this program teachers will:

4) be exposed to, and adapt, teaching techniques which lead the teachers to become participants and co-learners with the students rather than prescribers and dispensers of "packaged knowledge" to students;
5) gain confidence as individuals that they can function as facilitators of learning rather than dispensers of knowledge.

By participating in this program community persons will:

6) become individually, actively involved in school curriculum planning at various subject levels;
7) be involved as co-learners in various activities that are directed towards the development of sound value systems involving environmental issues and problems.

H. MATERIALS:

1) Materials produced:
    Primary (K-6)--A Walking Tour of Historic Warrior Run
    Secondary (7-12)--Homesteading model; homesteading attitudinal instrument (evaluation); homesteading cognitive instrument (evaluation)
    Other--student-prepared maps of local area
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development:
    Contemplating seeking state validation first
6) Commercial association: None

I. IMPLEMENTATION:

Does not apply as our materials are all locally designed, implemented and evaluated.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program:
    Presently being established
3) Pre-service training program: No
4) Kinds of preparation programs: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

There are three definite, separate areas that have been reached by the project efforts. Therefore, each area should be spoken of separately:

1. The most notable achievement has been the creation of a situation in which the community is influencing various school projects. Some situations are very limited and specific (such as a local hunting club providing all necessary ammunition, firearms, physical facilities, and instruction for a one-day seminar in safe handling of various types of firearms for our sixth-grade students taking Hunter Education Courses) and some are very broad and comprehensive (such as an organization called The Warrior Run/Fort Freeland Heritage Society negotiating a lease with the Warrior Run School District by which the Heritage Society has primary responsibility in funding and designing activities utilizing a plot of school-owned land approximately 15 acres in size, through which the community and school population will become more aware and appreciative of the natural and man-made heritage of the Warrior Run area). Both types of situations must be considered in their own light when determining their merit. Other significant situations indicating a positive community input have been:

    a) The second year's operation of a successful archaeology field school involving high school students as well as volunteer adults under the tutelage of a professional staff;

    b) The anticipated expansion of the Hunter Education Program to include a field school utilizing an obstacle course on school-owned property demonstrating safe hunting techniques;

    c) The close association with the Northumberland County Conservation District through which the District has provided manpower, financing, and instructional staff towards the physical improvement of the educational complex;

    d) The active participation of entire families throughout the summer as they tend their gardens that had been started during the school term;

    e) The very solid founding of the Heritage Society, whose primary purpose has already been mentioned. During the first year's operation the society has attracted almost 400 paying members and supported a budget for operation of close to $10,000. Enclosed are some publications detailing some of the society's activities, goals, etc.;

    f) The extent to which over 50 percent of the school Board members have actively participated in some area of the above mentioned activities and thereby carried to each school board meeting a newly-found enthusiasm toward school curriculum.

2. Another separate area reached by project efforts has been the involvement of teachers and students. During the second year of project funding the following programs involved significant student participation:

   a) Tenth-grade summer school class (Comprehensive Environmental Studies);
   b) Eleventh-grade Security Through Homesteading class;
   c) Twelfth-grade Environmental Intern class;
   d) Archaeology Field School class (summer school);
   e) Hunter Education Field School (sixth grade);
   f) Warrior Run/Fort Freeland Heritage Society membership activities;
   g) Spring Day Activities (fourth grade);
   h) Individual classes utilizing KARE curriculum guides as well as locally-designed activities focusing on educational complex facilities.

   Teacher involvement was documented by their participation in:

   a) The Archaeology Field School;
   b) Heritage Society membership activities;
   c) Spring Day Activities;
   d) A three-day in-service program focused on each participant creating a single lesson plan for their classroom utilizing the physical facilities of the educational complex;
   e) Using the KARE curriculum guides which have been conveniently catalogued in each of the school libraries.

3. The third area of project efforts has been to maintain a high level of general public awareness of the project's activities and goals. This effort has been extremely successful in that a minimum of 105 news articles were printed by at least 11 different local and state newspapers, the local I.U. newsletter, state and regional Conservation District newsletters, and Heritage Society newsletters. Several "spot announcements" were carried on at least four different local radio stations and three different T.V. stations. Also, a year later than originally planned, a special documentary will be released by WPSX-TV during the fall of 1979 to the state-wide educational T.V. system. And, perhaps one of the most visible of the project's outcomes, was that the project director was honored by the County Conservation District as the "Environmental Teacher of the Year" and one local newspaper further honored the project director as one of several selected "Distinguished Citizens of the Year." Finally, as the funding year was drawing to a close, the Heritage Society sponsored a public program called "The Fort Freeland Bicentennial Commemorative Program" held on July 29. This well-planned program is fully described in one of the enclosed publications. Although the rain poured the entire day, still there were in excess of 1100 people who attended various parts of the day's program.

M. PLANS FOR THE FUTURE:

Most of the basic trial programs have been initiated and, at least to some degree, are functioning. After further evaluation, the least effective of these programs will be culled so as to release time and effort for the more effective programs. However, to insure long-term continuity of programs, teachers need to be more involved in designing "study units" which will utilize the educational complex facilities. This involvement can best be accomplished by providing the teachers with meaningful in-service programs. In order to offer a more feasible situation for teacher involvement, double-periods of class work need to be available for class scheduling. And, finally, it is the project director's recommendations that this project be given the incentive to be prepared as a candidate for state validation.

N. REPORT SUBMITTED BY: James T. Bullock
September 20, 1979

A. TITLE: 4-H MOBILE MARINE EDUCATION PROJECT:
PROJECT BLUE LOBSTER

B. DIRECTORS: David Abedon (and) Thomas Husband
Cooperative Extension Specialists
4-H Office
University of Rhode Island, Woodward Hall
Kingston, RI 02881
401/792-2463

C. DESCRIPTORS: Marine education

ADDITIONAL DESCRIPTORS: Coastal Zone education; decisionmaking

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
A trailer, in season, is available to see in operation.

E. PRINCIPAL STAFF: 6

CONSULTANT SERVICES UTILIZED:
Consultant services were volunteered and not paid for from: Woods Hole Oceanographic Institute; Massachusetts Cooperative Extension Service; University of Rhode Island Marine Advisory Service; Mystic Marine Life Aquarium; University of Rhode Island Department of Forest and Wildlife Management; and the Young Adult Conservation Corp.

F. HISTORY:

1) Principal originators:
David Abedon; Dr. Thomas Husband; Barbara Waters, Massachusetts 4-H Agent
2) Date and place of initiation:
November, 1978
3) Funding sources utilized:
Rhode Island Coastal Resources Management Council
4) Overall purpose:
To provide education about the Coastal Zone of the State of Rhode Island

G. OBJECTIVES:

1) Provide hands-on education for youth in the subjects of sealife, oceanography and ecology.
2) Provide a format for youth and adults to meet and be informed of issues affecting our fragile coastal environment.
3) Make the public aware of the marine resources of our coast and their value as well as the continuing need for their protection.
4) Serve as a unit of marine environmental educational resource materials and information about the 4-H program and the Coastal Resource Management Council.

H. MATERIALS: Not applicable

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION: Not applicable

K. MATERIALS EVALUATION: Not applicable

L. SUMMARY OF ACTIVITIES TO DATE:

This public education project provided informal educational opportunities for citizens with an emphasis on youth groups and youth group leaders. A two-month summer schedule was widely publicized for classes at 13 sites in the southern and eastern portions of Rhode Island. Preregistration for classes in the following areas were made available:

1. The Beach Moves
2. Coastal Ecology
3. Marine Adaptations
4. Sea Crafts
5. Marine Careers and Decision Making

The 22-foot trailer was equipped with two aquariums and a handling tank, and other materials. One aquarium contained a blue lobster, hence the name, another tank held inter-tidal specimens and the handling tank specimens representative of the sites that the trailer visited, i.e.: Rock Shore, Salt Marsh, etc.

This year approximately 400 attended classes of one hour or more, and 2700 visited and received information, handled specimens, and talked with the staff of Project Blue Lobster.

M. PLANS FOR THE FUTURE:

An expansion of the trailer's activities over a six-month period to do leader training in the northern and metropolitan areas of Rhode Island.

N. REPORT SUBMITTED BY: David Abedon
September 27, 1979

A. TITLE: PROJECT LEARNING TREE (RHODE ISLAND)

B. DIRECTOR: H. Wells "Red" French
State Department of Education
235 Promenade Street
Providence, RI 02908
401/277-3840

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education; urban environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 7

CONSULTANT SERVICES UTILIZED: Yes

F. HISTORY:

1) Principal originators:
   American Forest Institute in cooperation with Western Regional Environmental Education Council
2) Date and place of initiation:
   September, 1978: Rhode Island
3) Funding sources utilized:
   The originators
4) Overall purpose:
   To provide teachers with the training and materials necessary to teach environmental education in their classroom

G. OBJECTIVES:

1) Widen teachers' teaching techniques
2) Develop or strengthen teacher awareness
3) Environmental education for students through this teacher awareness
4) Workshops provide for interaction of people's ideas, knowledge, thoughts and concerns
5) Given insight to human-environmental relationships

H. MATERIALS:

Materials used are provided by the American Forest Institute.

I. IMPLEMENTATION:

1) Schools using entire set of materials: None indicated
2) Teachers adopting all of the materials:
3) Teachers using some of the materials: 146
4) Total students using all of the materials:
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Richmond Elementary School
R.F.D. #1
Wyoming, RI 02898

Hampton Meadows School
New Meadow Road
Barrington, RI 02806

Dr. Joseph A. Whelan
Elementary School
1440 Mineral Spring Circle
North Providence, RI 02904

Narragansett High School
South Pier Road
Narragansett, RI 02882

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (4-6 hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   The guides mentioned above and workshop materials from project

K. MATERIALS EVALUATION:

1) Evaluator:
   National project
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

Since September 1978 there have been seven Project Learning Tree workshops in Rhode Island. The workshops are held at different places throughout the state; ranging from schools, historical houses to nature study areas. At the workshops teachers receive Project Learning Tree activity books (secondary and elementary). Specially trained leaders conduct the workshops.

M. PLANS FOR THE FUTURE:

1) Continue training of teachers and distribution of materials
2) Target training to special needs teachers/schools (e.g., school for the deaf)

N. REPORT SUBMITTED BY: Red French

December 7, 1979

A. TITLE: ZOO EDUCATION PROJECT

B. DIRECTOR: Peter Samuelsen
Roger Williams Park Zoo
Providence, RI 02905
401/467-9013 or 9230

C. DESCRIPTORS: Conservation education, environmental education, marine education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Basic skills; health and nutrition

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
A zoo and wetlands area

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
Other zoo educators and environmental education people

F. HISTORY:

1) Principal originators:
   JoAnn Secor; Greg Geise; Barb Hodefield; Pete Samuelsen
2) Date and place of initiation:
   1975; Roger Williams Park Zoo
3) Funding sources utilized:
   Title III, Title X and Title IV-C; grants from the Rhode Island State Department of Education plus CETA salaries.
4) Overall purpose:
   To study zoo animals and wetlands both in the classroom and at the zoo.

G. OBJECTIVES:

1) To use the zoo as a community resource.
2) To improve students' basic skills (writing, reading, computation, and measurement).
3) To train teachers to implement the project.
4) To increase students' understanding of basic human and animal health and nutrition.
5) To increase students' understanding of behavioral and natural history characteristics of animals and the need for environmental preservation.

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--Zoo Animals and You, student text and teacher's edition; Rhode Island's Water World, student text and teacher's edition; 50 supplementary worksheets; two slide shows
2) Free materials available: None
3) Materials purchasable:
   Any extras of the above can be purchased from Roger Williams Park Zoo and the Rhode Island State Department of Education (Providence, RI)
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association:
   Our materials are not copyrighted, but have been designed (in part) and published by commercial firms.

I. IMPLEMENTATION:

1) Schools using entire set of materials: 8
2) Teachers adopting all of the materials: 20
3) Teachers using some of the materials: Not indicated
4) Total students using all of the materials: 600
5) Totals stated are definite.
6) Selected schools utilizing program materials:

Edgewood Highland School
160 Pawtucket Avenue
Cranston, RI 02905

Esek Hopkins Middle School
480 Charles Street
Providence, RI 02904

Nathanael Greene Middle School
721 Chalkstone Avenue
Providence, RI 02908

St. Matthew School
1301 Elmwood Avenue
Cranston, RI 02910

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (1-1/2 hours, twice yearly)

K. MATERIALS EVALUATION:

1) Evaluator:
   Curriculum Research and Development Center, University of Rhode Island, Kingston, Rhode Island
2) Pertinent published research on evaluation:
   1978 and 1979; interim and final reports
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

The project has two units, each being one semester in length. Zoo Animals is Unit I and is presented in the fall semester to fifth- and sixth-grade students. It emphasizes conservation of wildlife, animal behavior, adaptations to environments, and animal health and nutrition. Unit II, Wetlands, is presented in the second semester to the same school children who had the Zoo Animals unit. It emphasizes the importance of water resources, types of saltwater and freshwater habitats, etc. This project is implemented by the teachers in school using project texts and worksheets. Two field trips to the zoo per year are also scheduled for each class.

M. PLANS FOR THE FUTURE:

Secondary education programs on animal behavior, conservation, evolution. No funding has been procurred as of yet and no definite curriculum designed.

N. REPORT SUBMITTED BY: Peter Samuelsen
September 6, 1979

A. TITLE: CARATUNK WILDLIFE REFUGE--THE
AUDUBON SOCIETY OF RHODE ISLAND

B. CO-DIRECTORS: Carolyn A. Stefanik (and)
Suzanne G. Weinmann
Caratunk Wildlife Refuge
Brown Avenue
Seekonk, MA 02771
617/761-8230

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education (limited), natural resources, outdoor education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Five miles of trails, visitor cabin and barn

E. PRINCIPAL STAFF: 17

CONSULTANT SERVICES UTILIZED: None

F. HISTORY:

1) Principal originators:
   Suzanne Weinmann; Carolyn Stefanik
2) Date and place of initiation:
   September, 1976; Caratunk Wildlife Refuge
3) Funding sources utilized:
   Program fees
4) Overall purpose:
   To teach others to appreciate and to understand the natural world, and we encourage environmentally sound pastimes. Also encourage stewardship to our environment and care for the limited resources of the planet.

G. OBJECTIVES: None indicated

H. MATERIALS: Not applicable

I. IMPLEMENTATION:

1) Schools using entire set of materials: None indicated
2) Teachers adopting all of the materials: None indicated
3) Teachers using some of the materials: None indicated
4) Total students using all of the materials: None indicated
5) Totals stated are estimated/definite: Not indicated
6) Selected schools utilizing program materials:

D. Beckwith Junior High School [In-school 6-week program]
Winthrop Street
Rehoboth, MA 02769

Palmer River School [Teacher Workshop]
Winthrop Street
Rehoboth, MA 02769

E. Providence School System (4th Grades) [School Field Trip]
E. Providence, RI

Cedar Hill [Schoolyard Program]
Red Chimney Drive
Warwick, RI

J. TEACHER PREPARATION: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Education programs include:

1) Teacher workshops--at Caratunk and on school site.
2) School field trips.
3) Nature walks around schoolyards.
4) The Nature Program--16 visits to 4th, 5th and 6th grade classes.

M. PLANS FOR THE FUTURE:

Similar to existing programs, probably centered more around the school location.

N. REPORT SUBMITTED BY: Suzanne Weinmann
October 3, 1979

A. TITLE: MARINE ENVIRONMENTAL STUDIES

B. COORDINATOR: David M. Whitaker
Toll Gate High School
575 Centerville Road
Warwick, RI 02881
401/738-3300 Ext. 297

C. DESCRIPTORS:

Energy education, environmental education, marine education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Marine field activities by boat/shore

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: None indicated

F. HISTORY:

1) Principal originators:
   Julius Breit; Maurice Blais
2) Date and place of initiation:
   June, 1973; Toll Gate High School
3) Funding sources utilized:
   Title III, ESEA FY 1974-76; local funding since
4) Overall purpose:
   Students will learn the marine environmental science of Rhode Island's greatest natural resource, Narragansett Bay, via the hands-on field approach

G. OBJECTIVES:

1) Revitalize an interest in science
2) Learn marine science by actual involvement
3) Utilize the resources of the community and state in teaching marine science

H. MATERIALS:

1) Materials produced:
   Secondary (7-12)--Marine Environmental Studies Field Manual
2) Free materials available:
   Marine Environmental Studies Field Manual
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: Unknown
2) Teachers adopting all of the materials: Unknown
3) Teachers using some of the materials: 150
4) Total students using all of the materials: Unknown
5) Totals stated are estimated
6) Selected schools utilizing program materials:

North Junior High School
Pittsfield, MA 01201

Grand Island High School
1100 Ransom Road
Grand Island, NY 14072

Walter Theran High School
900 Chicago Avenue
Melrose Park, IL 60160

Wareham Senior High School
Wareham, MA 02571

J. TEACHER PREPARATION: None

K. MATERIALS EVALUATION:

1) Evaluator:
   CRDC, University of Rhode Island, Kingston, RI 02881
2) Pertinent published research on evaluation: None
3) Unpublished research summary:
   Contact CRDC for details

L. SUMMARY OF ACTIVITIES TO DATE:

See "Marine Field Study on the High School Level" by David M. Whitaker, in The American Biology Teacher 37:4, April 1975.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: D. M. Whitaker
October 1, 1979

Previous Directory References: 1973, 1975

ERIC Document:

ED 141 175 Marine and Environmental Studies Field Manual

A. TITLE: W. ALTON JONES ENVIRONMENTAL EDUCATION CENTER

B. DIRECTOR: Ms. Janis Albright
Environmental Education Coordinator
W. Alton Jones Campus
University of Rhode Island Extension
West Greenwich, RI 02816
401/397-3304

C. DESCRIPTORS: Environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Hands-on Nature Museum; nature trail

E. PRINCIPAL STAFF:
Fall, Winter = 9 Spring, Summer = 13

CONSULTANT SERVICES UTILIZED: None

F. HISTORY:

1) Principal originators:
George Wheatly; Dean Coble, University of Rhode Island
2) Date and place of initiation:
Spring, 1974
3) Funding sources utilized:
Land donated to University of Rhode Island; funding for various school programs, ESEA Title III, and $5,000 mini-grant; state funds; W. Alton Jones Foundation
4) Overall purpose:
To teach school children in New England to have an appreciation and knowledge of the natural environment so that they can later on in life have that background to make sound environmental decisions

G. OBJECTIVES:

1) Provide environmental education classes to school groups
2) To work with the general public in developing an environmental ethic--through workshops, nature walks
3) To teach classroom teachers to use their school site to teach environmental education (through teacher workshops)
4) Act as a research service in environmental education for the state

H. MATERIALS:

1) Materials produced:
   Primary (K-6)/Secondary (7-12)--Outdoor Adventure, A Teacher's Guide to Learning at URI's W. Alton Jones Campus
2) Free materials available:
   The Web-W. Alton Jones Newsletter
3) Materials purchasable: None indicated
4) New instructional materials being developed: None
   Mainly our emphasis is in teaching through classes and workshops
5) Materials anticipated for development: None indicated
6) Commercial association: None indicated

I. IMPLEMENTATION:

Our teacher's manual is given to all teachers to have.
Selected schools utilizing program materials:

Mr. Maurice Blais-Project MALO
Tollgate School
Warwick, RI

Project EARTH-Mr. Robert Picchione
Cranston Elementary School
Cranston, RI

Ms. Meg Suk
Norton Middle School
64 W. Main Street
Norton, MA 02766

Ms. Joan Coppers
Wheeler School
216 Hope Street
Providence, RI

J. TEACHER PREPARATION:

1) Consultative service available:
   On an informal basis
2) In-service education program:
   When teachers bring their classes to an overnight(s) program, our staff of field teacher naturalists do pre-post trips. This gets the teachers prepared.
3) Pre-service training program:
   See #2 above
4) Kinds of preparation programs:
   Workshop (fall--two 1-day programs; spring--one 1-day program)

K. MATERIALS EVALUATION: Not applicable

L. SUMMARY OF ACTIVITIES TO DATE:

School year programs:

1) Environmental education classes to school groups ages 8-high school
2) Project Adventure Course to high school and college groups
3) Teacher workshops

Summer:

1) Summer Ecology Camp, 8-high school

General Public Use:

1) Environmental walks
2) Weekend programs (i.e., Senior Citizens Day, Womens Wilderness Weekend)
3) Hands-on Museum

M. PLANS FOR THE FUTURE:

1) Getting student teachers from the University of Rhode Island to use this as part of their teacher training
2) Alternative energy-solar workshops

N. REPORT SUBMITTED BY: Ms. Janis Albright
September 7, 1979

A. TITLE: ENVIRONMENTAL CONTROL

B. DIRECTOR: Stephen C. Burke
Woonsocket Area Vocational-Technical Facility
400 Aylsworth Avenue
Woonsocket, RI 02895
401/765-2700

C. DESCRIPTORS: Environmental education

ADDITIONAL DESCRIPTORS: Pollution identification; water quality tests; vocational training; plant tissue culturing

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED:
On a volunteer basis from State Department of Health and local industry

F. HISTORY:

1) Principal originators:
   Area Vocational-Technical Advisory Committee
2) Date and place of initiation:
   September, 1976; Woonsocket Area Vocational-Technical Facility
3) Funding sources utilized:
   Local education agency
4) Overall purpose:
   Train students to do routine water quality and air quality tests or help them with advanced technical training such as junior college or college entry level.

G. OBJECTIVES:

1) Basic job skills, entry level
2) Water chemistry and air chemistry study
3) Landscaping and greenhouse work

H. MATERIALS:

1) Materials produced: None indicated
2) Free materials available: None indicated
3) Materials purchasable: None indicated
4) New instructional materials being developed:
   Yes, 10-12
5) Materials anticipated for development:
   Tissue culture of plants for greenhouse skills
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 1
2) Teachers adopting all of the materials: 1
3) Teachers using some of the materials: 1
4) Total students using all of the materials: 1
5) Totals stated are definite
6) Selected schools utilizing program materials:

Woonsocket High School
Cass Avenue
Woonsocket, RI 02895

Cumberland High School
Mondon Road
Cumberland, RI 02864

North Smithfield High School
Greenville Road
North Smithfield, RI 02876

Burriville High School
Burriville, RI

These four school systems send students to our facility for training. Any requests for information should be sent to our school.

J. TEACHER PREPARATION: Not applicable

K. MATERIALS EVALUATION:

1) Evaluator:
   State Department of Education
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

The last three years have been used to develop a core of program objectives to tailor individual programs for students. Although a very workable program, due to lack of job opportunities the program is being phased out. This year we were working with the State Department of Health to start monitoring air quality from the school.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Stephen C. Burke
September 1, 1979

A. TITLE: PROJECT ALIVE (ALL OF LIFE INSTILLED IN VITAL EDUCATION)

B. DIRECTOR: A. Doug Echols
Clover School District #2
Knox Street
Clover, SC 29710
803/222-4817

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education, urban environmental education

ADDITIONAL DESCRIPTORS: Math Skills K-12, Language Arts Skills K-12, Science Topics K-12, Social Studies Topics K-12

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
An Environmental Education Center and 75 acres as an outdoor study area

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
Various environmental and subject area consultants were used in the development of materials. Their efforts supplemented and enhanced primary development effort on the part of teachers and the project curriculum specialist, Pat Francis.

F. HISTORY:

1) Principal originators:
Dr. Wesley McNeil; Clover School District Board of Trustees; Martin A. Ramsey, Superintendent
2) Date and place of initiation:
April, 1977; Clover School District
3) Funding sources utilized:
ESEA Title IV-C
4) Overall purpose:
To develop environmental education curriculum materials that enhance specific skill improvement in the four subject areas of math, science, social studies, and language arts while improving environmental understanding

G. OBJECTIVES:

1) improve environmental knowledge
2) clarify environmental attitudes
3) improve skill development in math, science, social studies and language arts

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--1400 student activities, teacher aids
   Secondary (7-12)--1400 student activities, teacher aids
   Other--project manual (overview); four slide tape presentations; additional teacher aids
2) Free materials available: None
   Project will not be validated until August 1980 and no materials are available until that time
3) Materials purchasable: None
4) New instructional materials being developed:
   None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 6
2) Teachers adopting all of the materials: 91
3) Teachers using some of the materials: None indicated
4) Total students using all of the materials: 2700
5) Totals stated are definite.
6) Selected schools utilizing program materials:

Kinard Elementary
Pressley Street
Clover, SC 29710

Clover Middle School
Wilson Street
Clover, SC 29710

Clover Junior High School
Knox Street
Clover, SC 29710

Clover High School
Highway #55
Clover, SC 29710

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (2 days)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Complete workshop notebook of comprehensive materials related to environmental understanding

K. MATERIALS EVALUATION:

1) Evaluator:
   Outside consultant; (in process) pretest only-posttest spring 1980
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

Project activities to date include the development of environmental materials that are subject area specific (extensive breakdown of skills and topics appropriate to the four basic subject areas of math, science, social studies, and language arts). These materials are highly usable by regular classroom teachers because they are organized and referenced in a fashion that is like other specific subject area materials as well as environmental. The table of contents of our materials is similar to the subject area teachers textbooks. This means as lesson plans are being made, teachers may glance through the ALIVE table of contents for the same skill or topic they are presently planning to teach and have a student-centered activity that teaches both the subject area emphasis and the environmental emphasis at the same time. These materials are different from any other known environmental materials.

M. PLANS FOR THE FUTURE:

1) Full implementation of all project products September 1979-May 1980
2) Submit state and national validation applications, late summer and fall 1980
3) Disseminate project products 1980

N. REPORT SUBMITTED BY: Doug Echols
August 30, 1979

A. TITLE: ECOLOGY

B. DIRECTORS: Nelson Bennett and Staley McPeak
Hamilton County Department of Education
317 Oak Street
Chattanooga, TN 37403
615/757-2640

C. DESCRIPTORS: Environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 5

CONSULTANT SERVICES UTILIZED:
Visited with Bill Hammond, Lee County, Ft. Myers, Florida; used some of their printed material. Also, Russ Griffith, U.S. Forest Service, "Investigating Your Environment"

F. HISTORY:

1) Principal originators:
   Nelson Bennett
2) Date and place of initiation:
   1973; East Ridge Junior High School, 5-9th grade classes of ecology
3) Funding sources utilized: None indicated
4) Overall purpose:
   To develop a more direct hands-on process approach to learning about the environment; the use of the existing school campus came into play here

G. OBJECTIVES:

1) to develop an understanding of the complexity of relationships that exist between organisms and the whole environment
2) to develop an understanding of the biophysical environment, both natural and man-made, and its role in contemporary society
3) to develop a clear understanding that man is an inseparable part of the biophysical environment and that he has the ability to alter relationships of this system
4) to develop a fundamental understanding of the biophysical environmental problems confronting man and how these problems can be solved
5) to develop attitudes of concern for the quality of the biophysical environment which will motivate citizens to participate in biophysical environmental problem solving
6) to develop the scientific skills needed in problem solving related to biophysical environment. These skills include, but are not limited to, reading and comprehending scientific material, organizing scientific data, formulating hypotheses, testing hypotheses, writing a scientific report, and presenting the results of a scientific study

H. MATERIALS:

1) Materials produced:
   Secondary (7-12)--Curriculum guide for ecology (9 or 10)
2) Free materials available: None
3) Materials purchasable:
   Curriculum Guide for Ecology--Jean Stephens, Director of Curriculum Development, 317 Oak Street, Chattanooga, TN 37403
4) New instructional materials being developed:
   Yes, elementary level
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 2
2) Teachers adopting all of the materials: 5
3) Teachers using some of the materials: 11
4) Total students using all of the materials: 450
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Ooltewah High School
Ooltewah, TN 37363

East Ridge Junior High School
4400 Bennett Road
East Ridge, TN 37412

Soddy-Daisy High School
Route #3
Soddy-Daisy, TN 37379

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
   So far it has been only for teachers within our system
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (20 hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   We use the U.S. Forest Service material

K. MATERIALS EVALUATION:

Information contained in the U.S. Forest Service material.

L. SUMMARY OF ACTIVITIES TO DATE:

The teaching of ecology in Hamilton County has influenced the thinking and forwarded the environmental education skills of approximately 1,000 students since its beginning in 1973.

The present status of ecology in Hamilton County schools is that we have classes in one school for sure this fall with two other schools possibly having it.

We do think that we will be expanding the program to include all ninth grades in our system within the next five years because the University of Tennessee at Chattanooga is obtaining a director of environmental education who will be planning and developing sites at or near all of our secondary schools.

M. PLANS FOR THE FUTURE:

We will be working directly with the Chattanooga Nature Center, Route 4, Garden Road, Chattanooga, Tennessee 37409 to develop materials to be used in all grade levels of our school system.

N. REPORT SUBMITTED BY: Nelson E. Bennett
August 31, 1979

A. TITLE: NOLICHUCKY ENVIRONMENTAL EDUCATION PROGRAM

B. DIRECTOR: William Douglas Ratledge
c/o Greene County Board of Education
Greeneville, TN 37743
615/639-4194

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
A day-use program using Tennessee Valley Authority's Nolichucky Waterfowl Sanctuary and Environmental Study Area

E. PRINCIPAL STAFF: 1-5

CONSULTANT SERVICES UTILIZED: No

F. HISTORY:

1) Principal originators:
   Tennessee Valley Authority; Upper East Tennessee Educational Cooperative
2) Date and place of initiation:
   June, 1975; Nolichucky (Sanctuary)
3) Funding sources utilized:
   Funds from Tennessee Valley Authority and Upper East Tennessee Educational Cooperative
4) Overall purpose:
   To develop environmental education in Upper East Tennessee

G. OBJECTIVES:

1) Develop and implement a day-use Environmental Education Program using the Nolichucky Waterfowl Sanctuary and Environmental Study Area.
2) Develop and/or implement Environmental Education in the school systems of Upper East Tennessee.

H. MATERIALS:

1) Materials produced:
   Primary--K-5 EE Activities Guide; 6-9 EE Activities Guide
   Secondary--10-12 EE Activities Guide (unprinted)
   Other--"Nolichucky Activities File Folder" for use in the Nolichucky day-use program (all grade levels)
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: Yes
   All levels
5) Materials anticipated for development:
   Classroom activities correlated to the Nolichucky Program
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 40
2) Teachers adopting all of the materials: 600
3) Teachers using some of the materials: 1000
4) Total students using all of the materials: 10,000
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Tusculum View Elementary School Greeneville, TN 37743	Greeneville High School Greeneville, TN 37743
Harold McCormick Elementary School Elizabethton, TN 37643	Mosheim Elementary School Mosheim, TN 37818

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshop (variable, 1 hour to 1 day)
    Summer Institute (variable but usually two weeks)
    Evening Classes (quarter through East Tennessee State University)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Since 1974 a day-use environmental education program has been developed at the Nolichucky Waterfowl Sanctuary and Environmental Study Area for the thirteen public school districts belonging to the Upper East Tennessee Educational Cooperative. About 6,000 students participate in this project annually.

Environmental education curricula have also been implemented in many of the school districts. Environmental education activity guides have been developed by local teachers and have been implemented. U.S. Office of Education validated environmental education programs have been adopted, through the efforts of this project, by many of the participating districts. Priority one materials have been adopted extensively.

The Nolichucky Activity File Folder is used by teachers in the classroom as well as in planning field trips to the Nolichucky Environmental Study Area. Many workshops are conducted for teachers so that they can integrate environmental education into the classroom.

M. PLANS FOR THE FUTURE:

1) Development of a secondary environmental science course in Greeneville City and Greene County Schools
2) Development of a Residential Environmental Education Center to compliment the Day-Use Program
3) Development of an Environmental Education Program for the College of Education at East Tennessee State University

N. REPORT SUBMITTED BY: Doug Ratledge
November 7, 1979

A. TITLE: KINGSPORT ENVIRONMENTAL EDUCATION PROGRAM

B. DIRECTOR: Jack Rhoton
Kingsport City Schools
1701 E. Center Street
Kingsport, TN 37664
615/245-3155

C. DESCRIPTORS: Conservation education, energy education, environmental education, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF:
Classroom teachers

CONSULTANT SERVICES UTILIZED: Yes
Limited basis

F. HISTORY:

1) Principal originators:
    Jack Rhoton and others
2) Date and place of initiation:
    1970; Kingsport City Schools
3) Funding sources utilized:
    Supported mainly by local school system
4) Overall purpose:
    To produce an active environmentally-oriented citizen

G. OBJECTIVES:

The program is founded on the realization that there is a definite need for learning experiences which help students become:

1) aware of their natural and man-made environment and the related problems
2) knowledgeable and accurately informed about the total environment and related problems
3) motivated to find alternatives or solutions to these problems
4) committed to and involved in some type of constructive action to remedy these problems

H. MATERIALS:

1) Materials produced:

- Primary (K-6)--Bays Mountain Nature Center Curricular Materials
    - Kindergarten Lesson Plan
    - Animal Homes (Grade 1)
    - Variety and Interdependence of Living Things (Grade 2)
    - Soil (Grade 3)
    - Using Our Senses to Understand Our World (Grade 4)
    - Concepts of Ecology (Grade 5)
    - Spaceship Earth (Grade 6)
  - Solar Energy Activities and Projects for Elementary and Secondary Students
  - Investigations for a Mobile Environmental Education Laboratory
- Secondary (7-12)--Bays Mountain Nature Center Curricular Materials
    - Spaceship Earth (Grade 7)
    - Spaceship Earth (Grade 8)
    - Man's Dependence on Plants (High School)
    - Social Studies in the Woods (High School)
    - Avian Biology (High School)
    - Geology (High School)
    - Physical Science (High School)
  - Solar Energy Activities and Projects for Elementary and Secondary Students, 1978
  - Investigations for a Mobile Environmental Education Laboratory, 1973
  - Energy Activities and Resources for the Secondary Student, 1975
- Other--
    - Environmental Education: A Resource Guide, K-12, 1978
    - Science Guide, K-12, 1977
    - Teacher Guidelines for Resident Environmental Education Programs
    - Annual Report: Environmental Education in the Kingsport City Schools, 1979
    - Guidelines for Safety in the Science Classroom and Laboratory, 1978

I. IMPLEMENTATION:

1) Schools using entire set of materials: 10
2) Teachers adopting all of the materials: None indicated
3) Teachers using some of the materials: 150
4) Total students using all of the materials: 3000
5) Totals stated are definite.
6) Selected schools utilizing program materials:

Jefferson Elementary School
Westmoreland Avenue
Kingsport, TN 37664

Jackson Elementary School
Jackson Street
Kingsport, TN 37660

Washington Elementary School
E. Sevier Avenue
Kingsport, TN 37660

Johnson Elementary School
Ormond Drive
Kingsport, TN 37664

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (one-half day followed by several mini-workshops)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The Kingsport City School System has been actively involved in environmental education since 1970. The program was initiated as primarily nature study in focus, however, in subsequent years the program has expanded into a comprehensive environmental education approach spanning all grade levels. The program is activity-focused, involvement-oriented and centered around environmental problems and the wise use of natural resources.

The program is founded on the realization that there is a definite need for learning experiences which help students become: aware of their natural and man-made environment and the related problems, knowledgeable and accurately informed about the total environment and the related problems, motivated to find alternatives or solutions to these problems, and committed to and involved in some type of constructive action to remedy these problems.

Listed below is a brief description of several segments of the Kingsport City Schools Environmental Education Program:

Bays Mountain School Program: Bays Mountain Park lies between Bays Mountain and the Holston River Mountain approximately five miles southwest of Kingsport. The nature preserve, educational-use area, comprises some 1300 acres of land and a lake of 44 acres. The park was developed by the City of Kingsport.

A nature center building is centrally located in the nature preserve. The programs and exhibits here assist students to better understand his relationship and role with the total environment. The center includes a planetarium, exhibit hall, darkroom, library, two classrooms, laboratory, and exhibit workshop. Trails lead from the center building through a variety of habitats and teaching stations.

Students, K-12, from the Kingsport City School System participate in the Bays Mountain School Program throughout the school year. Programs at the park are presented as separately scheduled outdoor/environmental programs approximately two hours in length and planetarium programs approximately one hour long. Pretrip and posttrip activities are included in all the curriculum materials. These activities integrate many curriculum areas such as creative writing, painting, social studies, displays, research projects, as well as studies related to water, earth, and biological resources. All the school programs at the park serve as supporting segments for the total Kingsport Environmental Education Program.

Solar Energy Project: A solar energy guide has been developed by the Kingsport City Schools Environmental Education Programs that contain a wide variety of concrete and revealing experiments concerning solar energy for both elementary and secondary students. The guide also contains a series of background information on numerous solar-related areas for the teacher. In conjunction with the solar energy guide, a solar hot water collector was built at one school. This unit consists of a 4x8 collector, 52-gallon water storage tank and a sink. The primary purpose of this project is to serve as a demonstrational and educational tool that can be utilized to teach students how solar works.

Environmental Studies Course for High School Students: High school students in the seventies have exhibited vivid and genuine concern for environmental education issues. The judicious teacher attempting to channel this curiosity into truly comprehensive problem-focused learning experiences is many times inhibited when confronted with the organizational constraints of the typical school day. To overcome such restraints, the Kingsport City School System, requested and received permission from the State Department of Education to offer an experimental community environmental problem-focused course for high school students during the summer of 1974. In subsequent years the course has been taught during the spring semester. The overriding purpose of the course was to provide realistic opportunities for high school students to become actively involved in determining sources, investigating causes and suggesting alternative solutions to community environmental problems.

Curriculum Development: Over the past several years the Kingsport City School System has developed a variety of curricular materials in the area of environmental education. In all cases teachers have assisted in the development of these materials. Teachers now are in the process of writing energy activity packets for each grade level, K-12. These materials are expected to be ready for use during the 1980-81 school year.

Mobile Environmental Education Laboratory: In May 1972, the Kingsport City School System received a grant from the Tennessee Valley Authority to plan, develop and implement as a demonstration project, a mobile environmental education laboratory. Basic for the entire project is the utilization of a 1972 Ford Econoline van designed and equipped for environmental studies. The mobile unit now is used primarily in conjunction with a high school level environmental studies course and selected community resource facilities.

School Site Development: Environmental education implies taking advantage of the total environment for conducting environmental studies. The school campus offers many unique opportunities for studying the environment. Following is a list of significant development on elementary school campuses in Kingsport: nature trails, trail guides, trail stations, compass courses, weather station, ecology ponds, wildlife plantings, greenhouses, vegetable gardens and outdoor classrooms.

Community Resources: Within every community there are facilities, either natural or man-made, which may be utilized in an environmental education program. Likewise, most communities have persons with expertise in related areas of environmental study. These community resource consultants can be valuable additions to a total environmental education program.

During the fall of 1977 a Visiting Scientist Program was developed between Dobyns-Bennett High School and Tennessee Eastman Company. Scientists from Eastman visit high school science and math classes to lecture on various science and environmental-related topics. The visiting scientists and the teachers involved agreed that the following should serve as broad objectives of the program: to develop interest in environmental issues among high school students, to make science relevant to the solution of environmental problems, and to create and promote better understanding between professional scientists, teachers and students.

East Tennessee State University in conjunction with Kingsport City School System wrote and submitted a proposal to the National Science Foundation for Precollege Development in Science Program in Elementary Science. This program was funded for the fall of 1978. Specifically the proposed project involves (20) participants from the Kingsport City School System. All are K-5 teachers. The project is designed to provide participants with improved knowledge of science and environmental education concepts, and to assist participants in the development of laboratory skills and techniques.

Other local field trips that aid the teacher in the area of environmental education are viewed as being an extension of the classroom. Bays Mountain Nature Center, Nolichucky Environmental Center, Pine Mountain Settlement School all provide the students and teachers opportunities to learn and enhance what is taught in the classroom.

Many students from the Kingsport City Schools participate in the day-use program at Nolichucky. The Nolichucky Study Area is located in Greene County, six miles south of Greeneville. It is felt the program at Nolichucky complements the Bays Mountain Program; especially the energy aspect of the Nolichucky Program.

Students in the Kingsport City School System are involved in resident environmental education programs. Fifth-grade students participate in the Pine Mountain Settlement School (Pine Mountain, Kentucky). This is a week-long resident program. The program focuses on environmental education, not merely as nature study, but as a function of the total curriculum including art, mathematics, history, and language arts and their relationship to the total environment.

Environmental education in Kingsport is an integral part of the total school curriculum. Activities conducted outside the classroom are an extension of the in-school program, all studies out of school are closely related to the in-curriculum. Through this approach, it is believed the student will become acquainted with his total environment and aware of the impact that he, as an individual and man collectively, has on future environmental quality.

M. PLANS FOR THE FUTURE:

See L above.

N. REPORT SUBMITTED BY: Jack Rhoton
September 24, 1979

Previous Directory References: 1973, 1975

ERIC Documents:

ED 073 922 Mobile Environmental Education Laboratory

ED 073 923 Investigations for a Mobile Environmental Education Laboratory

ED 086 494 Mobile Environmental Education Laboratory, Final Report

ED 108 891 Energy Activities and Resources for the Secondary Student

A. TITLE: DEPARTMENT OF ENVIRONMENTAL/OUTDOOR EDUCATION

B. DIRECTOR: Ms. Lib Roller - Coordinator
Head School
500 20th Avenue North
Nashville, TN 37203
615/320-1082

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education, urban environmental education.

ADDITIONAL DESCRIPTORS: Curriculum enrichment out of doors; Pioneer/Indian lore.

D. HEADQUARTERS: Same as B.

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
School of the woods resident outdoor school - school site activities - pioneer living program.

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
Tennessee Department of Conservation
Tennessee Department of Archaeology (help set up dig)
State Museum - Fort Nashboro (use in pioneer living)

F. HISTORY:

1) Principal originators:
   Lib Roller, Robert Neal (Title I Project Director)
2) Date and place of initiation:
   June, 1966
3) Funding sources utilized:
   Title I - 5 years
   E.S.S.A. - 1 year
   Metro Schools - 7 years
4) Overall purpose:
   To provide students K-6 and special education and teachers with knowledge, understanding, awareness, and stewardship of the environment through hands-on activities.

G. OBJECTIVES:

1. To utilize the school sites and community to enrich the existing school curriculum.
2. To provide materials and equipment so that the classroom teacher can conduct outdoor education activities.
3. To provide inservice for teachers to better equip them to use the out of doors as a learning lab.
4. To provide a resident outdoor school to promote both social relationships and knowledge of the out-of-doors.

H. MATERIALS:

1) Materials produced:
   The Bicentennial in Tennessee
   Outdoor and Environmental Education Journal, Grades K-6
   Using the School and Community: An Environmental Study Area
   Teacher's Handbook, Grade 5: Environmental Education
   The Stream Activity Guide
   Baggage Tags for Learning Out of Doors
   Rock-Mineral-Fossil Activity Book
   The Senses Activity Manual
   The Pond Activity Guide
2) Free materials available: None listed.
3) Materials purchasable:
   Large manuals $2.50
   Activity guides $1.50
4) New instructional materials being developed:
   K-6.
5) Materials anticipated for development:
   Pioneer living manual
   Indians of Tennessee - An Activity Manual
6) Commercial association:
   No; however, one firm has used a section of a manual.

I. IMPLEMENTATION:

1) Schools using entire set of materials: Metro, 96; Outside metro, 347
2) Teachers adopting all of the materials: Metro, 3,000; Outside metro, unknown
3) Teachers using some of the materials: Hard to know
4) Total students using all of the materials: Metro, 42,000; Outside metro, unknown
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Head School
500 20 Avenue North
Nashville, TN 32203

Andrew Jackson School

Glenview School

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshop (1 week in summer, several 1 day during year)
    Summer Institute (1 week)
    Evening Classes (2 hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
    The manuals can all be used for this and are being used by Northern Illinois University.

K. MATERIALS EVALUATION:

1) Evaluator: None.
2) Pertinent published research on evaluation: No response.
3) Unpublished research summary: No response.

L. SUMMARY OF ACTIVITIES TO DATE:

On school site activities with teacher and students, approximately 165 classes per year.
Kits of materials and equipment sent to teachers - 18 types used by about 1,200 teachers.
School of the woods - 1,500 fifth and sixth grades and their teachers.
Inservices - approximately 85 teachers (some for college credit).
Consultant services to other school systems (18 last year)
Writing teacher manual - one approximately every two years or as needed.
Pioneer living program - use of historic areas.

M. PLANS FOR THE FUTURE:

Pioneer living program.
Special activities for Nashville Bicentennial.
Energy activities.

N. REPORT SUBMITTED BY: Lib Roller
Coordinator - Environmental/Outdoor Education
September 4, 1979

Previous Director References: 1972, 1973, 1975, 1976

ERIC Documents:

ED 071 917	Using the School and Community, an Environmental Stude Area, Teacher's Handbook
ED 081 607	Outdoor and Environmental Education Manual, Grades K-6
ED 089 899	Baggage Tags for Learning Out of Doors
ED 094 912	Environmental Education Teachers' Handbook, Grade 5
SE 029 529	The Bicentennial in Tennessee, Teacher's Manual

A. TITLE: AN ENVIRONMENTAL EDUCATION RESOURCE CENTER

B. COORDINATOR: Loren Smith
Region IV Education Service Center
P.O. Box 863
Houston, TX 77001
713/868-1051

C. DESCRIPTORS: Environmental education, outdoor education, urban environmental education

D. HEADQUARTERS: 1750 Seamist
Houston, TX 77008
713/868-1051

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Library of Environmental Education; teaching aids, reference books, games, test kits, filmstrips

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED:
Teachers, musicians, professors, local resource people and backwoodsmen

F. HISTORY:

1) Principal originators:
   Loren Smith; Joe Strehle
2) Date and place of initiation:
   Summer, 1976; Houston Area Schools
3) Funding sources utilized:
   ESEA Title IV-C
4) Overall purpose:
   The multidisciplinary incorporation of environmental education into a school situation is a bifunctional curriculum enhancer; awareness and understanding

G. OBJECTIVES:

1) Create awareness of environment to local schools
2) Maintain resource center
3) Develop pilot program on ten campuses
4) Coordinate a series of weekend workshops
5) Author 80 auto-tutorial learning modules
6) Provide consultative assistance upon request

H. MATERIALS:

1) Materials produced:
    Primary (K-6)--40 autotutorial learning modules
    Secondary (7-12)--40 autotutorial learning modules
    Other--Gulf Coast Guide to Environmental Education (Volumes I, II and III); inservice workshops overview (9 of them)
2) Free materials available:
    Resource Center Inventory; Gulf Coast Guide to Environmental Education (limited); inservice workshop overviews
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 54 districts
2) Teachers adopting all of the materials: 30 districts
3) Teachers using some of the materials: 120
4) Total students using all of the materials: Not applicable
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Oak Creek Elementary School
3975 Gladeridge Drive
Houston, TX 77068

Anahuac Junior High School
Box 849
Anahuac, TX 77514

Cleveland Junior High/
High School
103 Legion Street
Cleveland, TX

Liberty High School
P.O. Box 671
Liberty, TX 77575

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshop (3 hours to 1-1/2 days)
    Weekend workshops (2 days; might vary in local areas)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
    Gulf Coast Guide III; inservice workshop list

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

Eighty autotutorial learning modules have been developed and are available for checkout through the Environmental Education Resource Center. This resource center also houses some 500 environmental education teaching aids including reference books, simulation activities, filmstrips and various exemplary curricula. I have developed and periodically presented nine teacher inservice workshops. A unique and excellent feature of this project is the weekend workshops. I have coordinated at least two of these per semester since the spring of 1977 at various locations within the Texas Gulf Coast area. The pilot schools were requested to give overviews of their programs which I compiled in Gulf Coast Guide to Environmental Education Volume III. I have written and performed, on several occasions, environmental songs for school assemblies for the purpose of awareness.

M. PLANS FOR THE FUTURE:

Inservice workshops; consultative assistance upon request

N. REPORT SUBMITTED BY: Loren Smith
August 30, 1979

A. TITLE: ENVIRONMENTAL EDUCATION FOR REGION VII
EDUCATION SERVICE CENTER

B. FACILITATOR: Dr. Mike Owens
P.O. Box 1622
Kilgore, TX 75662
214/984-3071

C. DESCRIPTORS: Conservation education, energy education, environmental education, outdoor education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: None indicated

F. HISTORY:

1) Principal originators:
   Mike Owens
2) Date and place of initiation:
   September, 1978; Kilgore
3) Funding sources utilized:
   Local school funds; Department of Energy through state funds
4) Overall purpose:
   Assist schools in implementing environmental and energy education plans for teachers.

G. OBJECTIVES:

1) To conduct inservice for local schools in energy education.
2) To provide consultant assistance in curriculum planning for environmental education.

H. MATERIALS:

1) Materials produced:
   An administrators guide for energy education
2) Free materials available: None
3) Materials purchasable:
   Energy Management Guide for Texas Administrators, $6.00 each
4) New instructional materials being developed: None
5) Materials anticipated for development:
   Checklists for energy conservation in schools
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 20
2) Teachers adopting all of the materials: 10
3) Teachers using some of the materials: 60
4) Total students using all of the materials: 1800
5) Totals stated are estimated.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshop (1 day)
    Summer Institute) (3 days-18 hours)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

This project is directed toward the 8,000 teachers in Region VII, offering direct technical assistance in their program planning and development. The products are area-specific and not widely available. This project will continue to provide teachers assistance in program development.

M. PLANS FOR THE FUTURE:

Workshops for regional teachers in energy education infusion strategies.

N. REPORT SUBMITTED BY: Dr. Mike Owens
September 4, 1979

ERIC Documents:

ED 141 116	Activities in Environmental Education, Environmental Studies Program
ED 180 827	Energy Education Curriculum Resource, Energy Education Workshops: Energy Sources of the Future
SE 029 839	Energy Management for School Administrators: Curriculum Facilities Audit

A. TITLE: STEPHEN F. AUSTIN STATE UNIVERSITY-SCHOOL OF FORESTRY CENTER FOR APPLIED STUDIES IN ECOLOGY AND THE ENVIRONMENT

B. DIRECTOR:
Dr. Kent Adair
Dean, School of Forestry
Box 6109 SFA Station
Nacogdoches, TX 75962
713/569-3301

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Field ecology centers at Milana, Texas and on Sam Rayburn Reservoir near St. Augustine, Texas

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED: No

F. HISTORY:

1) Principal originators:
   Dr. Kent Adair; Dr. Mike Legg; Dr. James Kroll
2) Date and place of initiation:
   September, 1978; Milana, Texas
3) Funding sources utilized:
   State of Texas; Stephen F. Austin State University
4) Overall purpose:
   Provide environmental education training to teachers, resource managers and students.

G. OBJECTIVES: None indicated

H. MATERIALS:

1) Materials produced: None
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: Yes
   3-8
5) Materials anticipated for development:
   Teachers guides to the Center for Applied Studies; video tapes on use of the Center for Applied Studies
6) Commercial association: None

I. IMPLEMENTATION:

Materials are currently being prepared.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    - Workshop
    - Evening Classes (during normal university semesters)
    - Other--there are six courses in environmental education currently under preparation and will be taught through Stephen F. Austin State University

K. MATERIALS EVALUATION: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

We are just opening a Center for Applied Studies in Ecology and the Environment. It is a field station facility with living facilities on the site for 50 people. We are currently preparing a teachers guide to the area and planning a workshop for local teachers in November 1979. We also have acquired a 1400-acre site on Sam Rayburn Reservoir where a similar facility will be constructed. Both facilities are available to public schools for use in environmental studies.

M. PLANS FOR THE FUTURE:

More teacher workshops and learning packages for the area.

N. REPORT SUBMITTED BY: Dr. Michael H. Legg
Co-Director
September 6, 1979

A. TITLE: DEVELOPMENT OF AN ENVIRONMENTAL EDUCATION SITE AND PROGRAM

B. DIRECTOR:
Dr. Bill Holifield
Plano Independent School District
1577 Avenue H
Plano, TX 75074
214/424-5602

C. DESCRIPTORS: Environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Environmental education for the handicapped, development of a trail for the visually handicapped

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
A 15-acre hardwood nature center

E. PRINCIPAL STAFF:
All teachers in the district; one coordinator

CONSULTANT SERVICES UTILIZED:
Consultants were used in the development of the project to advise on trails and identifying natural phenomena

F. HISTORY:

1) Principal originators:
   Plano Independent School District
2) Date and place of initiation:
   August, 1976; Plano, Texas
3) Funding sources utilized:
   ESEA Title IV-C
4) Overall purpose:
   To stimulate student awareness and concern for his environmental resources and to increase his knowledge of the interdependence of the biophysical and socio-cultural environment

G. OBJECTIVES:

1) To provide the student with a broad understanding of, and an appreciation for, the environment, both natural and man-made.
2) To understand that man is an integral part of the environmental system and that he has the ability to alter the interrelationships of the system.
3) To gain an awareness of fundamental understanding of environmental problems, how these problems might be solved, and the need to cooperate in their solutions.
4) To encourage students to develop a personal involvement to the extent that they will possess an environmental ethic which will guide their behavior.

5) To provide a setting, in addition to the regular classroom, to enhance student-teacher relationships.
6) To integrate the learning activities for environmental education into all the disciplines, but with primary emphasis in science education.
7) To improve the basic language arts and arithmetic skills by providing experiences that allow for the application of these skills in the natural environment.

H. MATERIALS:

1) Materials produced:
    Primary (K-6)--Curriculum guide and trail guide
    Secondary (7-12)--Curriculum guide and trail guide
    Other--large-type, Braille and tape trail guides for visually handicapped
2) Free materials available: None indicated
3) Materials purchasable:
    Curriculum guides K-8; trail guide; environmental curriculum for handicapped
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 26
2) Teachers adopting all of the materials: All
3) Teachers using some of the materials: None indicated
4) Total students using all of the materials: All
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Plano Senior High School
2200 Independence Parkway
Plano, TX

Haggard Middle School
2401 West Side
Plano, TX

Saigling Elementary School
3600 Matterhorn
Plano, TX

Shepard Elementary
1000 Wilson Drive
Plano, TX

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshop (2-6 hours)

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

Over 9,000 students annually visit the Plano Outdoor Environmental Center as part of their environmental education. Activities are interdisciplinary with a primary emphasis on science/environmental education. Students K-12, including handicapped students visit the site with their teachers.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Mrs. K. Hightower
Environmental Coordinator
November 1, 1979

Previous Directory Reference: 1972

A. TITLE: DALLAS INDEPENDENT SCHOOL DISTRICT
ENVIRONMENTAL EDUCATION CENTER

B. DIRECTOR: Dr. Robert F. Patton
1600 Bowers Road
Seagoville, TX 75159
214/287-5633

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, urban environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 4

CONSULTANT SERVICES UTILIZED:
Texas A&M University Wildlife Science Department; Dallas Museum of Natural History; Soil Conservation Service

F. HISTORY:

1) Principal originators:
   Bob Patton; Winston Hoskins; Jesse Harris; Mark Izzard
2) Date and place of initiation:
   August 21, 1976; Dallas Independent School District
3) Funding sources utilized:
   1976-77, ESEA Title IV-C
4) Overall purpose:
   Support the Dallas Independent School District Baseline Document; serve as extension of classroom for Dallas Independent School District teachers and students.

G. OBJECTIVES:

1) Development of environmental awareness
2) Prepare students to be decision makers concerning environmental problems
3) Support Dallas Independent School District baseline

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--30 K-6 programs presented at the Center
   Secondary (7-12)--30 7-12 programs presented at the Center
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: Yes
   K-12 guides to programs
5) Materials anticipated for development:
   Filmstrips and tapes on environmental education
6) Commercial association: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshop (2 hours)
    Evening Classes (five, 2-hours)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The project is in its second full year of our new center in Seagoville. Last year 10,000 students participated in programs at the center. We anticipate 15,000 this year. We serve as an extension of the classroom for the Dallas Independent School District teacher. Up to this time we have been mostly science-oriented. The materials we have developed are for use at the center for our single visitation programs which are for a half-day or full day.

M. PLANS FOR THE FUTURE:

1) Completion of nature trails
2) Petting farm
3) Herb garden for visually handicapped
4) Picnic areas

N. REPORT SUBMITTED BY: Robert F. Patton
November 28, 1979

A. TITLE: HOUSTON INDEPENDENT SCHOOL DISTRICT'S OUTDOOR EDUCATION CENTERS

B. DIRECTOR: Position vacant; contact
Dalton R. Gregory
Site Coordinator
Rt. 2
Box 25 B
Trinity, TX 75862
713/594-2541

C. DESCRIPTORS: Conservation education, environmental education, marine education, outdoor education.

ADDITIONAL DESCRIPTORS: Human relations.

D. HEADQUARTERS: Same as B.

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
A 180 acre site which houses our residential camp.

E. PRINCIPAL STAFF: 59

CONSULTANT SERVICES UTILIZED:
We have used consultants in the areas of natural science, O.B.I.S., archeology, media, and discipline.

F. HISTORY:

1) Principal originators:
Advisory Committee: Leo Gallegos, Paul McGee, Ewell Sessom, Audean Allman, John Griffith, Nancy Olive, W. Lou Shields, Jim Connally, Joe Huckstein, Courtney Paules, Kelly Sigler, Alice Webb.
2) Date and place of initiation:
Fall of 1975, 3 leased camps.
3) Funding sources utilized:
Some Federal seed money but mainly local district funds. Now the only Federal money comes for free breakfast and lunch program.
4) Overall purpose:
See The Curriculum.

G. OBJECTIVES:
See The Curriculum.

H. MATERIALS:

1) Materials produced:
   The Curriculum
   Outdoor Education Center
   Houston Independent School District
2) Free materials available: None.
3) Materials purchasable: None.
4) New instructional materials being developed:
   Continually building our curriculum, basically aimed at 5th grade.
5) Materials anticipated for development: None indicated.
6) Commercial association: None.

I. IMPLEMENTATION: Not applicable.

J. TEACHER PREPARATION: Not applicable.

K. MATERIALS EVALUATION:

1) Evaluator: None.
2) Pertinent published research on evaluation: None indicated.
3) Unpublished research summary:
   In the process of developing research now.

L. SUMMARY OF ACTIVITIES TO DATE:

See The Curriculum.

M. PLANS FOR THE FUTURE: No response.

N. REPORT SUBMITTED BY: Dalton R. Gregory
November 14, 1979

ERIC Document:

ED 135 544 Administrative Procedures for Establishing an Effective Outdoor Program for 5th Grade Students of the Houston Independent School District

A. TITLE: OUTDOOR LABORATORY-TYLER INDEPENDENT SCHOOLS

B. DIRECTOR:
James E. Dudley
Route 2, Box 201
Whitehouse, TX 75791
214/566-2621

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Farming

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 7

CONSULTANT SERVICES UTILIZED: No

F. HISTORY:

1) Principal originators:
   Tyler Kiwanis Club
2) Date and place of initiation:
   October 21, 1949
3) Funding sources utilized:
   Kiwanis Project; Smith County Youth Foundation; Tyler Independent Schools
4) Overall purpose:
   Provide experiences for children that they would not receive in the regular classroom

G. OBJECTIVES:

1) Teaching student self-reliance
2) Teaching student to get along with schoolmates
3) Showing student how to keep strong and healthy
4) Increasing student appreciation of nature and farming
5) Develop student awareness of the importance of conserving our natural resources which provide student with food, clothing and shelter
6) Inspire student to willingly participate in school projects
7) Giving student a wholesome good time he'll long remember

H. MATERIALS:

1) Materials produced:
   Parent information
2) Free materials available: None
3) Materials purchasable: None indicated
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

A. TITLE: ALPINE SCHOOL DISTRICT OUTDOOR EDUCATION PROGRAM

B. DIRECTOR:
Gareth W. Seastrand
Alpine School District
50 North Center Street
American Fork, UT 84003
801/756-9671

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Economics of outdoor education, scarcity, supply and demand

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 60-70

CONSULTANT SERVICES UTILIZED:
Utah State University staff; Brigham Young University staff; Government agencies

F. HISTORY:

1) Principal originators:
   Calvin Walher, former elementary principal
2) Date and place of initiation:
   1966; Tony Grove Forestry Camp, Logan, Utah
3) Funding sources utilized:
   ESEA Title III one year state summer school and extended year funds plus student fees all but first year
4) Overall purpose:
   Help students appreciate the out-of-doors; the wise use of resources

G. OBJECTIVES: None

H. MATERIALS:

1) Materials produced:
   Other--orientation filmstrip for parents
2) Free materials available: None indicated
3) Materials purchasable:
   Student Manual, $2.00
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 25
2) Teachers adopting all of the materials: None indicated
3) Teachers using some of the materials: 65
4) Total students using all of the materials: 600
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

   They are used in the "Clear Creek Camp" located in Schofield, Utah--elevation 7800 feet.

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs:
   Summer Institute (2 weeks internship in camp)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

1) Students in fifth-grade spend one week in camp; 80 attend per week--600 students attend
2) Other students grades 6-12 use the camp by teacher request. Winter program. They stay in camp a day-night and day during the winter; 3000 participate in this program

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Gareth Seastrand

November 7, 1979

Previous Directory References: 1972, 1973

A. TITLE: SWANSON'S NORTH FORK ENVIRONMENTAL CENTER

B. DIRECTOR: A. Bruce Dursteller
Weber County School District
1122 Washington Boulevard
Ogden, UT 84404
801/394-8873

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
6000+ sq.ft. facility--includes men/women dormitories, rest rooms, large multi-purpose room, kitchen, located in remote mountainous area

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
University staff; Forest Service and Division of Wildlife Resources personnel have served as resources to this project

F. HISTORY:

1) Principal originators:
   Dr. Leland Burningham; Ron Stephens; County Commissioner Boyd Storey
2) Date and place of initiation:
   June, 1973; construction
   October, 1976; teacher/student utilization began
3) Funding sources utilized:
   Local funds; foundation funds
4) Overall purpose:
   The center affords a means to enrich the lives of children with ideas and experiences which they might not elsewhere encounter.

G. OBJECTIVES:

1) To enhance, enrich the lives of students through the outdoor learning experience.
2) To provide "hands on" learning experience which affects students' attitudes as well as skills in humanities, language, social science, history, economics and of course natural science.

H. MATERIALS:

1) Materials produced:
    Primary (K-6)--Curriculum Guide (Model Programs/Projects)
    Secondary (7-12)--Curriculum Guide (model Programs/Projects)
    Other--Teacher guide
2) Free materials available:
    Brochures (awaiting reprinting)
3) Materials purchasable:
    Curriculum guides designed to assist teachers--some copies have been made available to institutions and professional organizations.
4) New instructional materials being developed:
    Sound-slide orientation program
5) Materials anticipated for development:
    Guide to plants, animals and trails--common to the North Fork Drainage Area
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 35
2) Teachers adopting all of the materials: 500
3) Teachers using some of the materials: 200
4) Total students using all of the materials: 20,000
5) Totals stated are definite.
6) Selected schools utilizing program materials:

H. Guy Child
Attn: Leonore Skidmore
655 East 5500 South
Ogden, UT 84403

Municipal Elementary School
Attn: Mr. Don Clark
5775 S. 2200 W.
Roy, UT 84067

Plain City Elementary School
Attn: Dr. Larry Charleton
4394 W. 2425 N.
Ogden, UT 84404

Roy Junior High School
Attn: Ron Jahne
5400 S. 2100 W.
Roy, UT 84067

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshop (weekends-12 hours of institution)
    Summer Institute (one week)
    Other (monthly--in-service; quarterly--workshops; summer--workshops)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
    Curriculum guide, teacher guide; resource guide; equipment/materials listings

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

During the past year and a half since it opened, the facility has hosted:

- -more than 17,000 students for periods up to one week
- -more than 500 teachers for workshops and inservice training programs
- -some 650 teachers as instructors for participating classes
- -over 1,000 parents as chaperones

The facility provides lodging and meal facilities for 80 participants with separate wings for boy-girl dormitories. The center hall is a multi-purpose room which is designed to be used as the dining hall, auditorium, and classroom. The surrounding area includes hundreds of acres of land for environmental studies which are part of Weber County and Forest Service properties. An abundance animal life inhabits the area along with a variety of plant life and geological phenomenon.

While environmental studies take up a portion of the curriculum, it is not our intent to have an exclusive science-centered facility--but to have science, the environment, nature, the out-of-doors as a vehicle and enhancer for student growth in all curriculum areas.

To help insure that the facility would contribute to the total academic advancement of the students, a 65-member curriculum committee composed of district teachers representing elementary and secondary curriculum programs spent the summer of 1976 developing the Weber District's Environmental Education curriculum model. Under the direction of Earl Heninger, the model was edited, refined, and compiled during the summer of 1977. Two comprehensive curriculum guides, one designed for elementary use and the other for secondary programs, resulted from the efforts.

The guides cover applications from the science base of the curriculum for the Humanities, Languages, Social Sciences, History, Math and Economics.

Even though teachers are not required to use the curriculum guides, they must insure the District that a specific program on instruction will be carried out during the period of use at the Center. The application form requires that a complete schedule of learning activities be submitted before the school's attendance can be confirmed. Teachers are also encouraged to enlist the help of parents during the stay at the facility and each group is usually accompanied by several who serve as chaperones as well as teacher aides.

M. PLANS FOR THE FUTURE:

1) Conservation education projects co-sponsored by the soil/water conservation program manager
2) Fire prevention-home/forest
3) Week-long foreign language camps, science camps, art camps, music camps, Shakespeare camps--all affected by the physical surroundings which enhance student learning

N. REPORT SUBMITTED BY: A. Bruce Dursteller
September 25, 1979

A. TITLE: PROVO CITY SCHOOL BIG SPRING CAMP

B. DIRECTOR:
Monroe G. Gallier
Maeser Elementary School
150 South 500 East
Provo, UT 84601
801/373-7650

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Water

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes
Summer only

E. PRINCIPAL STAFF: 12

CONSULTANT SERVICES UTILIZED: No

F. HISTORY:

1) Principal originators:
   Monroe G. Gallier
2) Date and place of initiation:
   June, 1969; Provo, Utah
3) Funding sources utilized:
   Some federal; most comes from a state fund for summer school
4) Overall purpose:
   Give children an experience with the out-of-doors

G. OBJECTIVES:

Emphasis is placed upon teaching the whole child; that is, concern for helping him develop not only his academic skills but his social and lifetime leisure skills as well.

H. MATERIALS:

1) Materials produced:
   Our program is for fifth-grade students; we use a lot of self-made materials.
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (1 week)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

We take 125 fifth-grade students to a summer camp for five days and four nights. There will be from three to five groups going to camp. We set up a program to expose them to many things in the out-of-doors. Provo City helps us get up camp on their property that is watershed land in the mountains.

M. PLANS FOR THE FUTURE: None.

N. REPORT SUBMITTED BY: Monroe Gallier
September 20, 1979

Previous Directory Reference: 1973

A. TITLE: MILL HOLLOW CENTER

B. DIRECTOR:
Ronald S. Beckstrom
Granite School District
340 East 3545 South
Salt Lake City, UT 84115
801/268-8213

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Natural sciences education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Remote natural mountain campus

E. PRINCIPAL STAFF: 170

CONSULTANT SERVICES UTILIZED:
Government agencies; Bureau of Land Management, Wildlife Resources, Forest Service; Utah State University; University of Utah; Brigham Young University

F. HISTORY:

1) Principal originators:
   Ronald S. Beckstrom; Richard S. Peterson
2) Date and place of initiation:
   1964; Eastern Utah
3) Funding sources utilized:
   District; state; federal
4) Overall purpose:
   Multi-disciplinary education relevant to a natural outdoor setting

G. OBJECTIVES: None indicated

H. MATERIALS:

1) Materials produced:
   Primary (4-6)--teacher guide
   Secondary (7-12)--teacher guide
2) Free materials available:
   Program descriptions
3) Materials purchasable: None indicated
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 25
2) Teachers adopting all of the materials: 70
3) Teachers using some of the materials: 80
4) Total students using all of the materials: 6,000
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Crestview Elementary School
2100 E. Lincoln Lane
Salt Lake City, UT 84117

Hillsdale Elementary School
3275 West 3100 South
Salt Lake City, UT 84119

Upland Terrace Elementary School
3700 South 2860 East
Salt Lake City, UT 84109

William Penn Elementary School
1670 Siggard Drive
Salt Lake City, UT 84106

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshop (3 days, 2 nights)
    Summer Institute (3 days, 2 nights)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Residence education programs in a remote natural mountain environment for students, grades 4-12, and for community members.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: R. S. Beckstrom
September 26, 1979

Previous Directory References: 1972, 1973, 1976

A. TITLE: ENVIRONMENTAL STUDIES PROGRAM

B. DIRECTOR:
Ken Nicholson
Arlington Memorial High School
Arlington, VT 05250
802/375-2589

C. DESCRIPTORS: Environmental education, natural resources, outdoor education, population education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
State science consultant; County forestry and extension agent

F. HISTORY:

1) Principal originators:
   Ken Nicholson
2) Date and place of initiation:
   1973
3) Funding sources utilized:
   None
4) Overall purpose:
   Integrate environmental education into our normal science curriculum

G. OBJECTIVES:

1) Make students aware of their local environment and its problems
2) Prepare students to be intelligent voters on local environmental issues

H. MATERIALS: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs: None

K. MATERIALS EVALUATION: Not applicable

L. SUMMARY OF ACTIVITIES TO DATE:

Our science curriculum in grades 9-12 for all students is based on outdoor-environmental projects. It is our belief that a more long-lasting and widespread effect can be seen with this method.

9th grade	Earth Science--map and compass (orientation) Geology--weather, glaciers, streams and rivers
10th grade	Biology--freshwater biology (ponds), forests and trees, along with other laboratory biology topics
12th grade	Advanced Biology with Chemistry prerequisite

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Ken Nicholson
October 1, 1979

A. TITLE: MONTPELIER ENVIRONMENTAL EDUCATION PROGRAM

B. DIRECTOR:
Douglas Sherry
Union Elementary School
Park Avenue
Montpelier, VT 05602
802/223-6488

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, urban environmental education

D. HEADQUARTERS:
East State Street
Montpelier, VT 05602
802/223-6488

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Classroom for environmental education; teacher resource shelves

E. PRINCIPAL STAFF: 4

CONSULTANT SERVICES UTILIZED:
Program initiated with federal funds under Title III ESEA. We were evaluated yearly through the Federal Services Division of our State Department of Education.

F. HISTORY:

1) Principal originators:
   Montpelier Public Schools administration and teachers
2) Date and place of initiation:
   September, 1974; Montpelier, Vermont
3) Funding sources utilized:
   ESEA Title III
4) Overall purpose:
   Original purpose: Provide release time for classroom for teachers for professional improvement; while: providing lessons in environmental education for students in grades 1-6.

G. OBJECTIVES:

1) Provide an activity-based environmental education program for students in grades 1-6 and special education classes.
2) Provide alternative ways of learning emphasizing active participation of children.

H. MATERIALS:

1) Materials produced:
   Lesson plan units in several topic areas of environmental education (16 different topics); slide show about program; TV show (Kid's World) section on our program; several kits to accompany teaching units; 8 mm film on "Bird Banding"

2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: Yes
   Grades 1-6
5) Materials anticipated for development:
   Additional teaching units on environmental education topics
6) Commercial association: None

I. IMPLEMENTATION:

Within our school system only. Outside usage not easy to estimate.

1) Schools using entire set of materials: --
2) Teachers adopting all of the materials: --
3) Teachers using some of the materials: 12
4) Total students using all of the materials: 650
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Union Elementary School
1 Park Avenue
Montpelier, VT 05602

Barre Street School
Barre Street
Montpelier, VT 05602

East State Street School
East State Street
Montpelier, VT 05602

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (variable according to needs)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   16 teaching units

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The Montpelier Environmental Education Program is now in its sixth year of providing 16 to 32 hours of direct environmental education activities to each student in the elementary school. This is done through a curriculum utilizing in-class and on-site lessons provided by the Environmental Education Team and school staff who wish to be involved. We have established an environmental education resource room for students and staff where some lessons are conducted and where books and equipment are available for borrowing. The Environmental Education Team provides in-service training through workshops sponsored by the State of Vermont Department of Education to other schools in Vermont. We assist in coordinating workshops presented annually at the State Education Association Conference.

M. PLANS FOR THE FUTURE:

1) Occasional community activities--slide show presentations, nature hikes
2) Compiling teaching kits for use by teachers on topics not covered in our environmental education program (i.e., serving as science program resource staff)

N. REPORT SUBMITTED BY: Sandal W. Cate
Instructor, Environmental Education
October 2, 1979

A. TITLE: OCEAN STUDY

B. DIRECTOR: Joseph C. Tausta
Box 557
Derbyline, VT 05830
802/873-3349

C. DESCRIPTORS: Environmental education, marine education

D. HEADQUARTERS: North Country Union High School
Veterans Avenue
Newport, VT 05855

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 4

CONSULTANT SERVICES UTILIZED:
Prentice K. Stout, Graduate School of Oceanography, Narragansett, Rhode Island (University of Rhode Island)

F. HISTORY:

1) Principal originators:
   Joseph C. Tausta
2) Date and place of initiation:
   March, 1978; Newport, Vermont
3) Funding sources utilized:
   Mini-grant (1st year); student payment and local donations (2nd year)
4) Overall purpose:

   See attached mini-grant proposal

G. OBJECTIVES:

1) To familiarize our students with ocean environment through field trips, lab work, lectures by experts and simply being present on the coast.
2) To provide students with an opportunity to visit an environment different from their own (both scientifically and culturally).
3) To provide a contrast between a lake (freshwater) environment and a saltwater environment with respect to our Lake Memphremagog project.
4) To provide an experience which will relate to career choices.
5) To provide a practical experience in biological and physics-chemical techniques in the study of environment.

H. MATERIALS: None

I. IMPLEMENTATION: None

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of Preparation programs: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

In general, the youngsters in this area have not had the opportunity to see the ocean, not to mention study oceans at first hand. We in the science department feel that a three- to four-day trip to the University of Rhode Island Oceanography School is of great benefit. We see this as an opportunity to study a saltwater environment as a contrast to our ongoing study of Lake Memphremagog. Additionally, this trip is a broadening experience for youngsters whom have never had an opportunity to see an environment different from that in northern Vermont.

The minigrant provides the transportation, some housing costs, and salaries for graduate student guides. The full cost is out of the question for both the district and individually from our students under the present budget. We use the director of ocean education at the University of Rhode Island to set up a program where all aspects of oceanography are introduced through field trips, lectures, lab demonstrations, and just being there. We take our Hach Kit for water testing, and our various sampling nets, etc. for field work. The University of Rhode Island provides the housing, lab space and general itinerary. Four teachers of science volunteer their time during the week after school ends to chaperone and guide.

Activities in which students participate include:

-field trips/water examination labs
-lectures/demonstrations by experts from University of Rhode Island
-boat trip to Block Island to see beach structure, tidal pools and sea gull rookery
-trips to fishing boats, canneries, and other ocean-connected industries
-free time to simply explore beaches, marshes and other ocean/bay features
-water testing and wildlife observation
-make a specimen collection for display at the school

Evaluation is to be done through:

1) Student-kept journals of observations, itineraries and thoughts. A data composite journal will be compiled.
2) Evaluation forms.
3) Judgments by teachers based on conversation with participants.
4) Conference with participants to evaluate and change for next year(s).

M. PLANS FOR THE FUTURE:

Same as L above.

N. REPORT SUBMITTED BY: Joseph Tausta
September 6, 1979

A. TITLE: ENERGY FUTURES

B. DIRECTOR: Elsie M. Hasskarl
Readsboro Central School
Readsboro, VT 05301
802/423-7786

C. DESCRIPTORS: Energy education.

D. HEADQUARTERS: Same as B.

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Many devices for teaching applications of solar energy.

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED:
William Hasskarl, architect, Northeast Solar Energy Center.

F. HISTORY:

1) Principal originators:
   Elsie M. Hasskarl.
2) Date and place of initiation:
   January, 1978.
3) Funding sources utilized:
   Minigrant from Vermont State Department of Education.
4) Overall purpose:
   We must prepare our students to make decisions dealing with energy - preferably those that involve the lowest amount of risk - technologies that people can understand and control seem the best.

G. OBJECTIVES:

BEHAVIORAL OBJECTIVES

(From "Science 5/13" Nuffield Foundation, and Change, Macdonald Educational, Stage 3)

Some children between eleven and thirteen are developing the ability to think about abstractions. The work in this unit is designed to help develop the ability to use hypothetical reasoning and to separate and combine variables in a systematic way.

Attitudes, Interests, and Aesthetic Awareness

1. Acceptance of responsibility for their own and others' safety in experiments.
2. Preference for using words correctly.
3. Commitment to the idea of physical cause and effect.
4. Recognition of the need to standardize measurements.
5. Willingness to examine evidence critically.
6. Willingness to consider beforehand the usefulness of the results of the experiment.
7. Preference for choosing the most appropriate means of expressing results or observations.
8. Recognition of need to acquire new skills.
9. Willingness to consider the role of science in everyday life.
10. Willingness to extend methods used in science activities to other fields of experience.

Observing, Exploring, and Ordering Observations

1. Appreciation that classification criteria are arbitrary.
2. Ability to distinguish observations which are relevant to the solution of a problem from those which are not.
3. Ability to estimate the order of magnitude of physical quantities.

OBJECTIVES

What is the child likely to get out of working with this Unit?

1. The sun is the earth's main source of energy.
2. Have a knowledge of some of the common forms of energy.
3. Know that energy may be converted from one form to another.
4. Have a knowledge of energy chains.
5. Realize the involvement of energy with matter. If material things are changed, energy is involved in some way.
6. Know that energy and environment cannot be studied separately. One of the most important lessons of ecology is that "everything is connected to everything else."
7. Look at ways in which energy can be conserved. (U.S. use vs. world).
8. Appreciate and know about the various forms of renewable energy.

H. MATERIALS:

1) Materials produced:
   Secondary (7-12) slide show.
2) Free materials available: None.
3) Materials purchasable: None.
4) New instructional materials being developed:
   Eighth grade texts and tapes.
5) Materials anticipated for development:
   Text for fifth and sixth grades.
6) Commercial association:
   None; hope to be soon.

I. IMPLEMENTATION:

1) Schools using entire set of materials: 2.
2) Teachers adopting all of the materials: 2.
3) Teachers using some of the materials: None.
4) New instructional materials being developed: 60.
5) Totals stated are estimated.
6) Selected schools where the program materials are being used:

Whitingham Elementary School
Whitingham, VT

J. TEACHER PREPARATION:

1) Consultative service available: Yes.
2) In-service education program: Yes.
3) Pre-service training program: No response.
4) Kinds of preparation programs:
   Workshop (3 hours)
   Summer Institute (1 week)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: No response.

K. MATERIALS EVALUATION: None.

L. SUMMARY OF ACTIVITIES TO DATE:

I have given workshops at:
1) New England Environmental Education Conference September, 1979.
2) Norman Wilson Memorial Conference, Writing Environmental Curricula.
3) NESEC Solar Education Workshops, Woodstock, VT, Brattleboro, VT.
4) Two workshops scheduled for March and April, 1980, in Brattleboro, VT.

M. PLANS FOR THE FUTURE:

Publication of the curriculum; continued teacher education and dissemination of energy curricula.

N. REPORT SUBMITTED BY: Elsie Hasskarl

A. TITLE: GREEN MOUNTAIN AUDUBON NATURE CENTER

B. DIRECTOR:
Director
R.D. 1, Box 189
Richmond, VT 05477
802/434-3068

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Hands-on sugaring program; museum (still under development); 230-acre sanctuary; active beaver colony

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED:
In early stages of development, Nature Centers Division of National Audubon Society wrote survey report and educational-use plan to aid in further thought and action for implementation for Green Mountain Audubon Nature Center

F. HISTORY:

1) Principal originators:
   Board of Directors, Green Mountain Audubon Society, 1966; subsequent boards have also contributed to the development of the Nature Center
2) Date and place of initiation:
   September, 1966; Huntington, Vermont. First programs did not begin until late '60s and early '70s.
3) Funding sources utilized:
   Members, Green Mountain Audubon Society have used fund-raising activities to obtain most funding. Members and local businesses have contributed various amounts from year to year to assist in program implementation.
4) Overall purpose:
   Promote conservation of wildlife and the natural environment, and to educate man about his relationship with, and place within, the natural environment as an ecological system.

G. OBJECTIVES:

1) providing programs for school classes
2) teaching an ecology workshop for teachers and adults during the summer
3) instructing children during the summer in "Ecology Day Camp"
4) providing programs for family groups
5) operating only hands-on sugaring program in State of Vermont

H. MATERIALS:

1) Materials produced: None
2) Free materials available: None
3) Materials purchasable:
   Series of booklets (currently undergoing revision) can be purchased from Green Mountain Audubon Nature Center. Booklets include: BIRDS OF VERMONT-$4.00; BIRDS OF GREEN MOUNTAIN AUDUBON NATURE CENTER-$1.00; MAMMALS OF GREEN MOUNTAIN AUDUBON NATURE CENTER-$2.00; TREES AND SHRUBS OF GMANC-$2.00; MAPLE SUGARING-$1.00; WHITE PINE STORY-$1.00; GEOLOGY OF GMANC-$1.00; WATER CYCLE-$1.00; HUNTINGTON RIVER-$1.00
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION: Not applicable

K. MATERIALS EVALUATION: Not applicable

L. SUMMARY OF ACTIVITIES TO DATE:

Project includes teaching school children and working with adults on a variety of levels. All teaching is done primarily by volunteers who are trained by the director.

M. PLANS FOR THE FUTURE:

1) Upgrading maple-sugaring educational program with materials available to teachers and youth leaders.
2) Others--not sure at this time.

N. REPORT SUBMITTED BY: Janet Naher-Snowden
November 30, 1979

A. TITLE: SHELBURNE FARMS RESOURCES

B. DIRECTOR:
Dave Barash
Shelburne Farms
Shelburne, VT 05482
802/985-3222

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 2-3

CONSULTANT SERVICES UTILIZED:
From Antioch-New England and Montpelier Environmental Education Program (MEEP) and University of Vermont

F. HISTORY:

1) Principal originators:
   Marilyn Webb; Stephanie Spencer; Eileen Rockefeller
2) Date and place of initiation:
   September, 1978
3) Funding sources utilized:
   The Burlington Rotary
4) Overall purpose:
   To educate children and adults as to our natural resources within farm cycles and how we utilize those resources.

G. OBJECTIVES:

1) To have separate monthly theories that comply with the farm cycles
2) To provide hands-on activities
3) To create a "before and after" kit for school groups which would prepare them for field trips and follow-up on what they learn

H. MATERIALS:

1) Materials produced:
   Poetry from two different adult groups
2) Free materials available:
   Children's drawings and letters; limited amounts of poetry
3) Materials purchasable: None indicated
4) New instructional materials being developed: None
5) Materials anticipated for development:
   Unplanned as of yet
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 60
2) Teachers adopting all of the materials: 0
3) Teachers using some of the materials: 0
4) Total students using all of the materials: 1,000
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Shelburne Village School Shelburne, VT 05482	Essex Town Elementary Essex Center, VT
Stave Elementary School Stave, VT	Ferrisburg Central School Ferrisburg, VT

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs:
    Workshop (provide teacher workshops as part of our summer program)
    Summer Institute (1 day to 2 weeks)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Shelburne Farms Resources is a non-profit, educational organization which is legally independent from Shelburne Farms. Located on the farm property, it operates out of three unusual structures whose land it leases from the farm for $1 a year.

Shelburne Farms for the past several years has been working against the pressure of urbanization to remain agriculturally productive. The farm has historically been a Brown Swiss dairy farm, now bottling and distributing natural raw milk. Other farm products include meats, vegetables, and eggs. There are 500 acres of cropland which include alfalfa, clover, corn, barley, wheat and oats.

The goal at Shelburne Farms is to build soil, plant, animal and human health through ecological agriculture. This approach includes careful laboratory testing, composting of manure, crop rotation, cover cropping and non-toxic weed control.

The relationship between Shelburne Farms Resources (SFR) and Shelburne Farms is that SFR provides public access to the farm through tours, field trips and courses.

M. PLANS FOR THE FUTURE:

The preparation and follow-up kits as previously mentioned.

N. REPORT SUBMITTED BY: Eileen Rockefeller

Former Educational Consultant/
Current Public Relations Director
October 10, 1979

A. TITLE: VERMONT INSTITUTE OF NATURAL SCIENCE (VINS)
ELF (ENVIRONMENTAL LEARNING FOR THE FUTURE)

B. DIRECTOR: Sally Laughlin, VINS Director
Mary Holland, ELF Director
Church Hill
Woodstock, VT 05091
802/457-2779

C. DESCRIPTORS: Conservation education (VINS), environmental education (ELF), natural resources (VINS), outdoor education (ELF)

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 4 (ELF), 10 (VINS)

CONSULTANT SERVICES UTILIZED: None indicated

F. HISTORY:

1) Principal originators:
   Community parents requested program-VINS responded
2) Date and place of initiation:
   December, 1972; Woodstock, Vermont
3) Funding sources utilized:
   Private donations; contributions
4) Overall purpose:
   Environmental education for Vermonters of all ages (ELF-Environmental Learning for the Future--trains adult volunteers to be effective environmental educators of elementary school children throughout Vermont).

G. OBJECTIVES:

Heighten awareness, excitement plus concern for the natural world, specifically with elementary school children in Vermont, through adult volunteers.

H. MATERIALS:

1) Materials produced:
   Elementary environmental education background information and activity handouts, available only to schools contracting for ELF.
2) Free materials available: None indicated
3) Materials purchasable:
   Record of Vermont birds, newsletters (10/year), annual magazine: $8.00 VINS membership
4) New instructional materials being developed: Yes
   K-6 (environmental activity book)
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 20
2) Teachers adopting all of the materials:
3) Teachers using some of the materials:
4) Total students using all of the materials: 2,500-3,000
5) Totals stated are definite.
6) Selected schools utilizing program materials:

Calais Elementary School
Calais, VT 05648

Elm Hill School
Springfield, VT 05156

Waterbury Elementary School
Waterbury, VT 05676

Hartland Elementary School
Hartland, VT 05048

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Not indicated
4) Kinds of preparation programs:
    Workshop (2 hours)
    Summer Institute (1 week [5 days])

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

ELF workshops brought to 20 Vermont towns; training 250 volunteers, who bring environmental education workshops to approximately 2,800 elementary school children. A school contracts (for $300) for eight ELF workshops, given monthly at the school. Each year a school chooses one concept (Habitats, Adaptations, Cycles, All Around Us, Designs of Nature) from which they choose eight workshops.

M. PLANS FOR THE FUTURE:

Elementary environmental education

N. REPORT SUBMITTED BY: Mary Holland
School Services Director
October 1, 1979

Previous Directory References: 1973, 1975, 1976

A. TITLE: LEARNING THROUGH NATURE, LEVEL ONE

B. DIRECTOR: Marsha Cooper
Environmental Education Coordinator
Fairfax County Public Schools
Science Materials Center
5920 Summers Lane
Bailey's Crossroads, VA 22041
703/820-0340

C. DESCRIPTORS: Environmental education, outdoor education (schoolgrounds)

ADDITIONAL DESCRIPTORS: Interdisciplinary

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: None indicated

F. HISTORY:

1) Principal originators:
   Dr. Douglas Lapp; Marsha Cooper; Dr. Thomas Ferguson
2) Date and place of initiation:
   September, 1977
3) Funding sources utilized:
   Regular school budget for science curriculum staff and materials
4) Overall purpose:
   Incorporate environmental education into the primary curriculum

G. OBJECTIVES:

1) Develop simple, basic concepts pertaining to:
   a. plant life
   b. interdependence between plants and animals
   c. awareness of seasonal changes
2) Channel the excitement of discovery into other areas of learning, such as language arts, math, social studies, and the creative arts

H. MATERIALS:

1) Materials produced:
   Learning Through Nature, Level One
   - Teacher's Guide that provides background information as well as activities, resources, some worksheets, and evaluation tools
   - Illustrated Nature Calendars (one for each month)
   - Blank Nature Calendars for student record-keeping
   - Fungi and Critter Charts to provide single identification
   - Weather Calendars, cards, and graphs to facilitate observing and recording of the weather
   - Leaf Posters to introduce students to leaf shape, edges and veins
   - Poison ivy identification poster
   - Galls Poster to introduce students to galls and interdependence
   - Question guides for use by volunteer or student aides
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: Yes
   Second grade (Learning Through Nature, Level Two)
5) Materials anticipated for development:
   Teacher's guides for each of the above; posters and charts; worksheets; any other graphics that facilitate the use of the program
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 82
2) Teachers adopting all of the materials: 229
3) Teachers using some of the materials: 229
4) Total students using all of the materials: 6,800
5) Totals stated are definite.
6) Selected schools utilizing program materials:

Rolling Valley Elementary
6703 Barnack Drive
Springfield, VA 22152

Flint Hill Elementary
24444 Flint Hill Road
Vienna, VA 22180

Fairview Elementary
5815 Ox Road
Fairfax Station, VA 22039

Camelot Elementary
8100 Guinevere Drive
Annandale, VA 22003

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: No
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1-1/2 to 2 hours, 3 times a year)
   Other--A graduate level course, "Learning and Teaching About the Natural World," offering 3 graduate credits from the

University of Virginia, is provided for elementary teachers after school with Saturday field trips. The course is taught by the teacher/naturalist staff of the Audubon Naturalist Society

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

1976	Graduate level course initiated
1977-78	Author trial tested activities in three classrooms, received teachers' feedback, and materials tested
1978-79	Program trial tested in 70 classrooms by volunteer pilot program teachers, teachers guide writer, teacher materials developed
1979-80	First grade program being implemented in one-half of the elementary schools (190 teachers in 82 schools) second grade program being planned and tested in selected classrooms. Materials developed.

M. PLANS FOR THE FUTURE:

1980-81	-first grade program in the remaining one-half of the schools (160 teachers in 60 schools) -second grade program to be implemented in half of elementary schools
1981-82	-second grade program to be implemented in the remaining half of the elementary schools -develop comprehensive camping guide for elementary teachers. Provide training for volunteers and teachers.

N. REPORT SUBMITTED BY: Marsha Cooper
October 4, 1979

A. TITLE: INVESTIGATIONS IN ENVIRONMENTAL SCIENCE (I.E.S.)

B. DIRECTOR: Pam Lucey
Science Materials Center
Fairfield County Public Schools
5920 Summers Lane
Bailey's Crossroads, VA 22041
703/820-0340

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, population education

ADDITIONAL DESCRIPTORS: Valuing and decision making

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: No

F. HISTORY:

1) Principal originators:
Marylu S. Simon, Coordinator; Douglas M. Lapp, Science Curriculum Specialist
2) Date and place of initiation:
1973; Science Materials Center
3) Funding sources utilized:
I.E.S.
4) Overall purpose:
Develop an environmentally aware citizen, and provide students with background in basic ecological concepts and an opportunity to explore environmental problems, encourage students to realize their own responsibilities in helping to maintain our world ecosystem.

G. OBJECTIVES:

1) Module A, Organism and Populations: Students observe and record data from the living organisms in their own terraria and aquaria, that represent "mini-ecosystems," to discover relationships.
2) Module B, Communities and Ecosystems: Again, using live organisms, students explore the concept of food-energy transfer, and the relationships involved in the food web.
3) Module C, People and Their Environment: Builds upon the knowledge of ecosystems learned in Modules A and B. Students investigate water, air and noise pollution, solid waste disposal, and examine land-use problems. A land-use simulation game makes students aware that land-use decisions are usually difficult and complex.

4) Module D, Enrichment Activities: (Environmental Factors) Students explore the concept of an organism's response (growth and behavioral) to changes in temperature, water, chemicals, and gravity. These activities are best utilized by integration into Modules A and B and as a challenge to the scientifically-oriented student.

H. MATERIALS:

1) Materials produced:
   Secondary (7-12)--Investigations in Environmental Science (half year or full year depending on each school's population and budget). (1) teacher's guide, (2) activity cards, (3) ditto masters for student worksheets, (4) loaner kits on Energy Crisis, Solid Waste, Noise Pollution, (5) complete student teacher library for each classroom plus (6) complete materials and equipment.
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: Yes
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 23
2) Teachers adopting all of the materials: 65
3) Teachers using some of the materials: None indicated
4) Total students using all of the materials: 11,700
5) Totals stated are definite.
6) Selected schools utilizing program materials:

Hayfield (full-year classes)
7630 Telegraph Road
Alexandria, VA 22310

Cooper (full-year classes)
977 Balls Hill Road
McLean, VA 22101

Robinson (full-year classes)
5035 Sideburn Road
Fairfax, VA 22032

Lanier (Half-year classes)
3710 Bevan Drive
Fairfax, VA 22030

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (45 hours with graduate credit through the University of Virginia)

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

1973	Original edition introduced as a pilot project. This edition was developed and coordinated by Marylu S. Simon under the direction of Science Curriculum Specialist Douglas M. Lapp.
1974	The I.E.S. program was adopted countywide. Additional sections were written in the summer of 1974.
1975	The first series of revisions were written in addition to three new units for Module C.
1978-79	The entire program was revised in order to update the material to keep pace with new developments in environmental science, and to include ideas and activities from many of the I.E.S. teachers and students.

M. PLANS FOR THE FUTURE:

The program will be revised and updated according to suggestions made by I.E.S. teachers and students so that the program will continue to be a relevant and dynamic approach to environmental science.

N. REPORT SUBMITTED BY: Marsha Cooper
Environmental Education Coordinator
Fairfax County Public Schools
October 4, 1979

A. TITLE: AQUA RIVER VALLEY

B. DIRECTOR: William R. Walker
Virginia Water Resources Research Center
Virginia Polytechnic Institute
and State University
617 N. Main Street
Blacksburg, VA 24060
(703) 961-5624

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, urban environmental education

ADDITIONAL DESCRIPTORS: Water resources management

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 5

CONSULTANT SERVICES UTILIZED:
Not in the development stage. However, during the revision of the curriculum, one or two teachers who were involved in the field-testing of the materials may be hired as consultants.

F. HISTORY:

1) Principal originators:
William R. Walker, Director; Thomas G. Teates, Acting Director, Curriculum and Instruction Division, College of Education, Virginia Polytechnic Institute and State University
2) Date and place of initiation:
September, 1973
3) Funding sources utilized:
Bits and pieces of leftover grant monies, miscellaneous locally-generated income; attempting to obtain specific grant money for the revision of the curriculum, however; e.g., Office of Environmental Education
4) Overall purpose:
To develop a water resources management curriculum suitable for the secondary school level.

G. OBJECTIVES:

To develop an awareness in high school students of the interrelationships of social, legal, economic, political, and technical problems which must be addressed in a comprehensive and coordinated manner if the nation is to manage its water and land resources so as to provide equity and promote efficiency.

H. MATERIALS:

1) Materials produced:
   Secondary (7-12)--textbook with self-tests, teacher's guide, cassette tapes, filmstrip, slide show, film list, games and puzzles
2) Free materials available:
   All free materials have been distributed. The revised version of the Aqua River Valley materials will be available at cost or free if adequate funding is obtained.
3) Materials purchasable:
   All materials have been distributed. A few file copies which could be loaned to interested persons are available.
4) New instructional materials being developed:
   Specifically for grades 8-12, but we also hope to write a "junior" version of Aqua River Valley for grades 4-7.
5) Materials anticipated for development:
   All text material, teacher's guide, cassette tapes and slide show will be revised. A number of new slide-tape presentations will be developed.
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 18
2) Teachers adopting all of the materials:
   Materials used during 1978-79 school year
3) Teachers using some of the materials:
   Materials not available for adoption until revision is complete
4) Total students using all of the materials: 1,055
   1978-79 school year
5) Totals stated are definite.
6) Selected schools utilizing program materials:

Alleghany County High School
Attn: Nancy Wilkin
Route 2, Valley Ridge
Covington, VA 24426

Albemarle High School
Attn: Bev Otis
Route 5
Charlottesville, VA 22901

Bland County Combined School
Attn: Diane Umberger
Bland, VA 24315

Thomas Dale High School
Attn: Jennifer Horn
10238 W. Hundred Road
Chester, VA 23831

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1/2 day)

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

Aqua River Valley was published in the spring of 1978. Field-test sites and teachers were chosen in September, 1978. In-service workshops were held in November and late October. The curriculum was taught in 18 schools between November and May. On-site visits were conducted between November and May, and data was collected--pre-tests and post-tests, teacher evaluation forms.

Prior to publication: Textbook was written between September, 1973 and September, 1975 by a graduate research assistant, with considerable input from various departments at Virginia Tech. The text went through in-house editorial review, art work was completed by September, 1976. Due to lack of funds, the text was not published until February, 1978. Audio-visual aides were prepared between September, 1976 and February, 1978.

M. PLANS FOR THE FUTURE:

Aqua River Valley will be undergoing revision in both content and form, based on the field-testing evaluations. Specifically, we plan on the following activities:

1) rather than providing each student with a text, the revision will provide a three-ring, looseleaf notebook of resource material for the teacher, including duplicatable reading assignments and worksheets (small, topical booklets for students may be printed, however).
2) add laboratory experiments, ranging from simple ones for unequipped social studies classrooms to more complex experiments for advanced biology students.
3) add more detailed sections on a number of topics including water conservation, rural water systems.
4) improve the audio-visual material.
5) provide more of a variety of activities.

N. REPORT SUBMITTED BY: Sandra K. Birch
Coordinator
October 2, 1979

A. TITLE: VIRGINIA INSTITUTE OF MARINE SCIENCE
MARINE EDUCATION PROGRAM

B. DIRECTOR: James A. Lanier
Virginia Institute of Marine Science
Gloucester Point, VA 23062
804/642-2111, ext. 189

C. DESCRIPTORS: Conservation education, environmental education, marine education, natural resources, outdoor education.

ADDITIONAL DESCRIPTORS: Teacher training, instructional materials, aquariums.

D. HEADQUARTERS: Same as B.

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Small exhibit room with aquaria.

E. PRINCIPAL STAFF: 6

CONSULTANT SERVICES UTILIZED:
Many - mostly from professors of education, supervisors, and teachers.

F. HISTORY:

1) Principal originators:
   Present program developed by J. Lanier.
2) Date and place of initiation:
   1976 for present program, VIMS program itself began in 1940.
3) Funding sources utilized:
   State, sea grant, National Science Foundation, Virginia Wildlife Federation, local school board, Coastal Plains development funds.
4) Overall purpose:
   To increase the wise use of the marine environment and its resources and improve public appreciation and awareness of the world of water. We plan to accomplish this through programs specifically designed:

   a. To educate educators. The effect of working with teachers, supervisors, and specialists spreads from them to those that they teach. This multiplier effect makes educators a high priority target audience for marine education programs.

b. To provide coordination and information exchange services statewide, and increase cooperative education efforts between VIMS and other Sea Grant marine education programs across the nation. As Sea Grant support for marine education increases, the need for efforts to reduce duplication and improve dissemination and coordination between programs grows more critical.

c. To determine the areas of greatest need for the development and production of marine education materials. Curriculum and training aid development will continue with the improved direction provided by analysis of MEMS (Marine Education Materials System) and a needs assessment survey of Virginians with special marine knowledge.

d. To develop a more humanistic approach to marine education in Virginia, adding materials and activities suitable for use with English, art, social studies, and other classes. Although the emphasis at VIMS will remain on science, our overall marine awareness goals can be best achieved by reaching the broadest possible audience.

Approach

1. Conduct courses, workshops, seminars, and field trips for teachers, supervisors, and administrators from educational institutions at all levels.

2. Provide educational programs and field trips for school groups.

3. Provide advice and assistance to individual educators in obtaining teaching materials and audio-visual aids, and in other aspects of course development.

4. Coordinate the outside educational efforts of the entire VIMS staff.

5. Work with the media in the development of marine education programs for the public.

6. Provide general interest marine programs to the public.

G. OBJECTIVES: No response.

H. MATERIALS:

1) Materials produced:
   Contact VIMS for catalog.
2) Free materials available: No response.
3) Materials purchasable: No response.
4) New instructional materials being developed:
   K-12.
5) Materials anticipated for development: No response.

6) Commercial association: None.

I. IMPLEMENTATION:

We have too many diverse materials for listing.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshop (Various)
    Summer Institute (3 weeks)
    Evening Classes (One semester - 3 hour
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
    See catalog.

K. MATERIALS EVALUATION:

1) Evaluator:
    By users and other marine educators.
2) Pertinent published research on evaluation: No response.
3) Unpublished research summary: No response.

L. SUMMARY OF ACTIVITIES TO DATE:

We provide programs, advice, and assistance designed to improve public understanding of the marine environment and its resources. Marine education specialists lead field trips to beaches, marshes, and on our research vessels. We also make presentations on a variety of marine topics both at VIMS and elsewhere in the Commonwealth, and maintain an exhibit room with aquaria and displays at the Gloucester Point installation. The VIMS-Sea Grant Marine Education Center provides access to a large collection of marine education aids, including publications and audio-visual materials. Since 1977 the Marine Education Materials System (MEMS) has been a valuable part of this effort. MEMS provides a growing collection of curricula, field guides, and laboratory manuals available for nationwide distribution.

M. PLANS FOR THE FUTURE:

Continuation and expansion.

N. REPORT SUBMITTED BY: J. Lanier
Head, Marine Education Section
November 15, 1979

ERIC Documents:

ED 167 393	Guide to the Marine Education Materials Systmes (MEMS)
ED 167 421	Sensing the Sea: A Curriculum Guide in Marine Education for Grades Two and Three
ED 174 442	Sensing the Sea: A Curriculum Guide in Marine Education for Grades Kindergarten and First

A. TITLE: COMSEP: COMPREHENSIVE SCHOOL ENVIRONMENTAL PROGRAM, ORANGE COUNTY PUBLIC SCHOOLS, ORANGE, VIRGINIA

B. DIRECTOR: Pamela R. Kooistra
Orange County School Board
Box 349, Route 20 East
Orange, VA 22960
703/672-3871

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Each school in the system has environmental interpretation centers including nature trails, ponds, wildlife management areas, and greenhouses--one of which is solar powered.

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED:
Virginia Division of Forestry; National Forest Service; Soil and Water Conservation Commission; James Madison University-Biology Department; Piedmont Environmental Council; University of Virginia-Department of Science Education; Virginia Tech Extension Service; Virginia Department of Education

F. HISTORY:

1) Principal originators:
   Mr. Warren H. Widmyer; Mr. H. B. Lantz
2) Date and place of initiation:
   July 1, 1973; Orange County Schools
3) Funding sources utilized:
   ESEA Title IV-C; special programs; Orange County Schools
4) Overall purpose:
   Project COMSEP serves to educate students and community members to better understand the complex interrelationships of man and other organisms within the environment and to raise questions of individual and societal culpability in the use and misuse of our resources.

G. OBJECTIVES:

Project COMSEP has five major objectives as an environmental education program:

1) to educate environmentally literate students
2) to plan and utilize outdoor environmental learning centers
3) to develop and implement a K-12 environmental education curriculum
4) to in-service teachers in environmental education
5) to obtain parental support for school activities and policies

H. MATERIALS:

1) Materials produced:

Primary (K-6)--	
A Closer Look at My Environment	$1.50
Art is a Way of Living	2.00
Common Plants and Animals of Aquatic Habitats of Orange County	1.00
The Grocery Bag as a Pollution Package	1.50
Ecology--Where Do I Fit In?	1.00
Elementary Curriculum Guide in Environmental Education--Interdisciplinary Concepts and Activities Grade K-6	3.00
How Plants and Animals Adapt to Winter	1.00
Life in an Old Log Community	1.00
The Lightfoot Elementary School Ecology Trail	3.00
Environmental Physical Education	2.50
Reading in Environmental Education	2.00
Yesteryear--School Days	1.50
Games for Elementary and Intermediate Classroom	1.50
Secondary (7-12)--	
Air Pollution	1.50
Energy	2.00
Getting to Know Your Environment Through Maps and Mapping	2.50
Green Plants in Our Environments	3.00
No Deposit-No Return--What's it Costing Me?	2.50
Noise Pollution	1.50
Popollution	3.00
Poison by the Pound	2.00
Thermal Pollution	1.50
Water Pollution	2.00
Urban Planning	2.00
Weather--An Environmental Factor	3.00
Other--	
Cleaner Air Week	1.50
Development of Environmental Interpretation Centers	2.50
Environmental Education Media	1.50
Self-Training Program in Environmental Education for Teachers	.50
A Teacher's Guide to Environmental Careers	2.50
Techniques for Culturing and Maintaining Living Organisms	1.50
Environmental Education--Learning and Teaching Environmental Concepts and Attitudes	1.50
Environmental Education Books	1.00
Environmental Education--A Teacher Inservice Workshop	3.00
Project COMSEP--A Slide-Tape Presentation	1.00

Booklets listed above may be purchased by making checks payable to: Orange County High School Ecology Program.

2) Free materials available:
   Environmental Education--guide to planning and implementing environmental programs; OIKOS--student-produced newsletter
3) Materials purchasable:
   All materials listed in 1) above are available for purchase
4) New instructional materials being developed:
   Nature Trail Guide--K-3
5) Materials anticipated for development:
   Eco-Science Club Project Activities--slide/manual
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 6
2) Teachers adopting all of the materials: 118
3) Teachers using some of the materials: 220
4) Total students using all of the materials: 4,000
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Albemarle County Public Schools
County Office Building
Charlottesville, VA 22901

Henrico County Public Schools
P.O. Box 40
Highland Springs, VA 23075

Campbell County Public Schools
P.O. Box 99
Rustburg, VA 24588

Greene County Public Schools
P.O. Box 127
Stanardsville, VA 22973

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (depends upon needs assessment)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Environmental Education--Learning and Teaching Environmental Concepts and Attitudes, slide/tape; Development of Environmental Interpretation Centers, slides/booklet; Project COMSEP, slide/booklet

K. MATERIALS EVALUATION:

1) Evaluator:
   Dr. Mary Ann MacDougall, Research Methodology, University of Virginia, Charlottesville, Virginia
2) Pertinent published research on evaluation:
   "Environmental Education: An Answer to a Problem," by W. H. Widmyer and H. B. Lantz, Jr., Public Education of Virginia, Winter, 1976, Vol. 11, No. 4
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

1) A variety of environmental education materials have been produced which have been integrated into existing curriculum designs. Interdisciplinary guides for grades K-6 have been produced as well as unit guides, nature trail guides, audio-visual presentations, environmental simulation games, and project pamphlets.
2) Eco-Science Clubs exist from grades 3-12. Students are involved in community education as well as sponsorship of activities within the schools.
3) Environmental Interpretation Centers have been developed at each school in the county. These serve as outdoor classrooms. The centers include weather stations, greenhouses, nature trails, ponds, amphitheaters, etc.
4) Staff development sessions have been held within each school including inservice training sessions, minicourses, and resource sessions utilizing local expertise.
5) Project staff members have worked with community groups to help plan and implement environmental education projects. These have included paper recycling, energy education seminars, monitoring of automobile emissions, as well as beautification projects.

M. PLANS FOR THE FUTURE:

A comprehensive program of energy education within the community is in the planning stages. This program will emphasize the need for energy conservation, methods of conservation, and alternative energy sources.

N. REPORT SUBMITTED BY: Pamela R. Kooistra
September 25, 1979

Previous Directory Reference: 1976

ERIC Documents:

ED 137 064	Water Pollution. Project COMSEP
ED 137 065	"No Deposit-No Return" What's It Costing Me? A Complete Program of Action

A. TITLE: MATHEMATICS AND SCIENCE CENTER (ENVIRONMENTAL EDUCATION)

B. DIRECTOR: Dr. R. Wesley Batten
Mathematics and Science Center
2401 Hartman Street
Richmond, VA 23223
804/788-4454

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, outdoor education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
1) Environmental Study Area: nature trail, pond, etc.
2) Aquarium Complex (opening estimated July, 1980)

E. PRINCIPAL STAFF: 6

CONSULTANT SERVICES UTILIZED:
State and federal: Forestry, Soil and Water Conservation; Virginia Wildlife Commission; Virginia Department of Parks and Recreation; Philadelphia Electric Company

F. HISTORY:

1) Principal originators:
    Staff of Richmond Public Schools, in cooperation with surrounding school divisions
2) Date and place of initiation:
    1966; Richmond, Virginia
3) Funding sources utilized:
    ESEA Title III (1967-70)
4) Overall purpose:
    Provide enrichment education for students and inservice education for teachers

G. OBJECTIVES:

1) To provide enrichment opportunities for students
2) To provide for inservice training in environmental education for teachers; and
3) To provide a model for an environmental education program at school sites.

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--"The World of Math and Science Outdoors"--Teacher's Guide. Grade 3, 20 pp.; Oceanography Kit, "Rehash Trash"--Teacher's Guide, 16 pp.
   Secondary (7-12)--"Exploring Inner Space," a resource guide to marine science activities for earth science classes, 56 pp.
   Other--"Man and the Sea," a middle school marine science resource booklet, 94 pp.
2) Free materials available:
   Brochures and guides on these topics: recycling, marine education, and outdoor education
3) Materials purchasable: None
4) New instructional materials being developed:
   Energy (grades 1-8); rocks (grades 4-8); weather (grades 2-6). All are kits built around hands-on investigations
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 0
2) Teachers adopting all of the materials: 0
3) Teachers using some of the materials: 3,000
4) Total students using all of the materials: 0
5) Totals stated are estimated.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (as required)
   Evening Classes (3 hours per session)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The Mathematics and Science Center is a regional resource center serving a consortium of five public school divisions and several private schools in the Richmond, Virginia area. The Center has a broad commitment to the entire field of environmental education. We teach enrichment lessons in the schools promoting environmental awareness, we conduct in depth courses on Saturdays and in the summer, we circulate kits that reinforce environmental efforts, and we teach or sponsor inservice courses on topics in environmental education to teachers. We manage and make available to the public the well-known Spider Museum, founded by arachnid expert Ann Moreton. In the Fall of 1979, we organized and coordinated an environmental education conference for interested persons around the state in an attempt to form a professional organization to help promote environmental awareness and address issues.

M. PLANS FOR THE FUTURE:

We will complete development of the kits that are in production (energy: wind power, electricity, solar, nuclear, etc.; weather; rocks; and insects). We will monitor the activities of the Virginia Council on Environmental Education to insure its continued growth and vitality. We will generally be alert to the educational needs of our students and will do whatever is necessary to meet these needs.

N. REPORT SUBMITTED BY: Daniel S. Yates
Supervisor, Academic Programs
December 20, 1979

A. TITLE: ENVIRONMENTAL EDUCATION PROGRAM

B. DIRECTOR: Franklin H. Moricle
Supervisor, Secondary Science
Roanoke County Schools
526 College Avenue
Salem, VA 24153
703/389-0861 Ext. 276

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Five (5) school sites developed for environmental education.
Total of 97 acres and 6 miles of trails

E. PRINCIPAL STAFF: 0

CONSULTANT SERVICES UTILIZED:
Environmental education "mini" course through Virginia Polytechnic Institute and State University for teachers K-12

F. HISTORY:

1) Principal originators:
   Franklin H. Moricle
2) Date and place of initiation:
   Summer, 1972; Roanoke County Schools
3) Funding sources utilized:
   Green Thumb, Inc., a public service employment program for elderly low-income people; U.S. Youth Conservation Corps, summer program for young people ages 15-18
4) Overall purpose:
   Use the total school site as a place to teach environmental education. The areas developed are idealized trails with teaching loops and study area. They are composites of the outstanding natural, historical, and man-made features of the site.

G. OBJECTIVES:

The basic objective is to promote student awareness and understanding of the environment, both natural and man-made, and the realization that they are an inseparable part of a complex, interwoven world with the ability to alter it in important ways.

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--
   1) Approximately 150 short single investigations
   2) Trail Guide Booklets for the five developed school sites
   3) Land Use and Energy Games developed locally
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

Environmental education materials are made available to 37 schools and teachers in the system. Numbers using materials is unknown. Selected schools utilizing program materials:

Cave Spring High School
3712 Chaparral Drive, SW
Roanoke, VA 24018

Glenvar Junior High School
Route 1, Box 346
Salem, VA 24153

William Byrd High School
Highland Avenue
Vinton, VA 24179

Hidden Valley Junior High School
4901 Mt. Holland Drive, SW
Roanoke, VA 24018

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: No
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (1 day)
   Inservice Courses--The Roanoke County School Board sponsors from three to six environmental education "mini" courses (1 quarter hour) through Virginia Polytechnic Institute and State University for elementary and secondary teachers. The courses are designed to make learning in our outdoor areas both effective and relevant.

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Program Development

The basic program design was to develop materials locally, make it interdisciplinary and activity centered. Consideration was given to the total school site (building and grounds) as a way to stimulate environmental education.

An Environmental Activity Committee was formed in 1974 of seven very talented teachers with a keen interest in environmental education to review materials and investigate how other school systems were working with the problem of environmental education.

The committee was employed in two summer workshops (1974-75) to:

1) Inventory all school sites (37 schools) so activities could be individualized
2) Develop short single investigations for each site
3) Develop environmental education energy game
4) Develop land use simulation games, using areas within Roanoke County
5) Develop trail guide booklets for the five major trails
6) Provide inservice teacher workshops

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Franklin H. Moricle
November 9, 1979

A. TITLE: PROJECT ICE: INDIVIDUAL CONCERN FOR THE ENVIRONMENT

B. COORDINATOR: Barbara S. Allison
P.O. Box 6038
Virginia Beach, VA 23456
804/427-4716

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, population education

ADDITIONAL DESCRIPTORS: Public awareness education

D. HEADQUARTERS: 2512 George Mason Drive
Virginia Beach, VA 23456
804/427-4716

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
There are no special facilities except a port-a-lab bus. Our program utilizes the local environmental treasures and the school grounds for outdoor classrooms

E. PRINCIPAL STAFF: 40

CONSULTANT SERVICES UTILIZED:
Consultant services were used on the process of developing the courses for teacher training. A consultant was engaged to review the course content and to review/evaluate the attitudinal tests devised for use with the project.

F. HISTORY:

1) Principal originators:
   Two curriculum assistants employed in the Department of Instructional Services wrote the environmental proposal.
2) Date and place of initiation:
   August, 1977; Virginia Beach, Virginia
3) Funding sources utilized:
   ESEA Title IV-C; local funds
4) Overall purpose:
   The overall purpose of the project is to create an environmentally concerned and educated citizenry in Virginia Beach.

G. OBJECTIVES:

1) To educate teachers, students and the public about existing environmental problems.
2) To create a formal program of study which emphasizes the quality and preservation of the environment.
3) To train teachers in necessary contest of ecological and environmental topics.
4) To train teachers in methods of teaching environmental education.
5) To train teachers in methods of incorporating ecological and environmental topics into the existing curriculum.

H. MATERIALS:

1) Materials produced:
    Primary (K-6)--Environmental Education Curriculum Guide, Grade 4
    Secondary (7-12)--Environmental Education Curriculum Guide, Grade 7; Ecology (Environmental Education Guide), Grade 10
    Other--Slide tape programs; attitudinal tests-Grades 4, 7 and 10; content test for ecology, Grade 10
2) Free materials available: None indicated
3) Materials purchasable:
    Copies of the guides will be available after June, 1980 from the Department of Instructional Services
4) New instructional materials being developed:
    Slide tape programs to be used for teacher in-service training. (Example, "A trip to the beach" designed to assist teachers in organizing, planning, and conducting a field trip for lower elementary.)
5) Materials anticipated for development:
    Additional teacher in-service programs on topics such as: local environmental treasures, science fair projects, etc.
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 36
2) Teachers adopting all of the materials: 45
3) Teachers using some of the materials: 10
4) Total students using all of the materials: 2,200
5) Totals stated are estimated (3,4)/definite (1,2).
6) Selected schools utilizing program materials:

Green Run High School
1700 Dahlia Drive
Virginia Beach, VA 23456

Kemps Landing Intermediate
525 Kempsville Road
Virginia Beach, VA 23462

Princess Anne Junior High School
2509 Seaboard Road
Virginia Beach, VA 23456

Kempsville Elementary School
570 Kempsville Road
Virginia Beach, VA 23462

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Evening Classes (16 hours)
    Other--The original resource teachers received 6 hours of graduate training from a local university. The courses were specifically designed to meet the needs of the project.

K. MATERIALS EVALUATION:

1) Evaluator:
   Dr. Andrew Carrington, Department of Research and Testing,
   P.O. Box 6038, Virginia Beach, Virginia 23456
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

The project is in the third year of operation. The first year was spent training a corps of resource teachers (37 teachers). This training was successfully accomplished through a local university. Courses totaling six graduate hours were designed to meet project needs for training personnel in content information in environmental sciences, ecological relationships, teaching methods in environmental education and field laboratory experience.

A group of these trained resource teachers then assisted in the development of curriculum guides and curriculum materials for grades 4, 7 and 10.

These resource teachers have worked within their own schools to in-service teachers in content and methods of teaching environmental topics.

A course called Ecology was created for the tenth grade. This course is designed to increase student knowledge of ecological relationships within the earth environment, but also deals with values clarification, decision making skills and man's impact on the environment.

The curriculum guide is being expanded to include a specific unit on energy. In the summer of 1980 the curriculum guides will undergo revisions based on suggestions from teachers and evaluators.

The project coordinator has provided in-service training for teachers at other grade levels or in schools where there is not a resource teacher on the staff. The community has become involved through PTA, Garden Club and Civic League activities. The City of Virginia Beach has cooperated in a joint effort of erosion control whereby Project Ice students and teachers have assisted in planting 100,000 sprigs of American beach grass.

The project stresses use of environmental education as an interdisciplinary topic.

M. PLANS FOR THE FUTURE:

1) Expanded community involvement in-service training of additional teachers.
2) Interdisciplinary materials will be developed and in-service in this realm will be expanded.

N. REPORT SUBMITTED BY: Barbara S. Allison
November, 1979

ERIC Document:

SE 030 369 Implementing Environmental Education in the School Curriculum

A. TITLE: TURNBULL EXTENDED LEARNING CENTER

B. COORDINATOR: Ralph Stredwick
Department of Education
Eastern Washington University
Cheney, WA 99004
509/359-2484

C. DESCRIPTORS: Conservation education, environmental education, natural resources

D. HEADQUARTERS: Turnbull National Wildlife Refuge
Cheney, WA 99004
509/235-4723

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Classroom, comfort station, 2300 acres of study sites

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED:
Eastern Washington University; National Park Service; U.S. Forest Service; Soil Conservation Service; Bureau of Land Management; Cispus Environmental Center

F. HISTORY:

1) Principal originators:
   Ralph Stredwick
2) Date and place of initiation:
   February 1, 1979
3) Funding sources utilized:
   None except contributed time and instructional site materials from participating organizations and people
4) Overall purpose:
   1) to gain designation as an Extended Learning Center by Washington Superintendent of Public Instruction
   2) to become an official part of Cispus Environmental Learning Center organization
   3) promote and coordinate environmental education in region

G. OBJECTIVES:

1) Gain Extended Learning Center status for the ongoing program and establish transportation support for students
2) Assist teachers in using, modifying and developing programs in environmental education
3) Coordinate environmental education in area

H. MATERIALS:

1) Materials produced:
   The primary emphasis has been to assist teachers in modifying existing materials and developing activities specifically for their classroom use
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed:
   K-3 materials; K-6 materials for winter studies; K-6 materials for site [preliminary copies in September, 1980)
5) Materials anticipated for development:
   Extend above
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 0
2) Teachers adopting all of the materials: 0
3) Teachers using some of the materials: 0
4) Total students using all of the materials: 0
5) Totals stated are definite.
6) Selected schools utilizing program materials:

Grant School
District 81
Spokane, WA

Robert W. Reid Laboratory School
Eastern Washington University
Cheney, WA 99004

Eastland School
Central Valley School District
Spokane, WA

Lewis and Clark High School
District 81
Spokane, WA

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1 credit, weekend)
   Summer Institute (3 credits)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Prior to February 1979 this site has been used for conservation and environmental education from the 1920s to the present. Over 7,000 students K-12 visit Turnbull for environmental education each year. Additionally, some 3,000 tour the site each year.

Eastern Washington University has been offering environmental education workshops for teachers since 1971. These workshops are cooperatively supported by the agencies mentioned in E above.

This project in effect:

1) recognizes these activities
2) provides official status which allows schools to claim travel reimbursement
3) will assist in the promotion and coordination of environmental education in this region

Progress since its inception has been:

1) designation as an Extended Learning Center by Washington Superintendent of Public Instruction
2) organization of Eastern Washington Environmental Education Committee (EWEEK)

M. PLANS FOR THE FUTURE:

Provide assistance in:

1) school site use
2) Turnbull use
3) program development and evaluation

to the schools of the region through educational service districts and other organizations.

N. REPORT SUBMITTED BY: Ralph Stredwick
September 14, 1979

A. TITLE: PROJECT LIFE (LEARNING IN FAMILIAR ENVIRONMENTS)

B. COORDINATOR:
James M. Garner, Consultant
Washington State Conservation Commission
Pacific Avenue
Lacey, WA 98504
206/753-3895

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, urban environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 6

CONSULTANT SERVICES UTILIZED:
Project sponsors have hired the former Washington State Supervisor of Science Programs as consultant (full time); Far West Regional Laboratory personnel have also served in a consultative capacity.

F. HISTORY:

1) Principal originators:
   Staff members of the Soil Conservation Service and the Office of the State Superintendent of Public Instruction
2) Date and place of initiation:
   November, 1977; Spokane, Washington
3) Funding sources utilized:
   Soil Conservation Service, U.S. Department of Agriculture; Washington State Conservation Commission
4) Overall purpose:
   To improve the public's environmental literacy through the enlightenment of students in kindergarten through grade five.

G. OBJECTIVES:

1) To improve the level of understanding of environmental management, its responsibilities and its ramifications.
2) To influence constructively the values and personal commitments of students in kindergarten through grade five.

H. MATERIALS:

1) Materials produced:
   Primary (K-5)--A series of recommended activities for students and teachers in grades K through 5 to pursue on the elementary schoolyard
2) Free materials available: None indicated
3) Materials purchasable: None
4) New instructional materials being developed: Yes
   Kindergarten through grade 5

5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

We are now in the final stages of editing the trial version of our materials prior to submitting them to the state printer. These questions are premature so far as Project LIFE is concerned.

J. TEACHER PREPARATION:

Not as yet but will have in early and mid-1980.

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

1) organized statewide educational advisory committee with representatives from the Soil Conservation Service, the Washington State Conservation Commission, classroom teachers, curriculum specialists, school administrators, State Superintendent's Office (Public Instruction), higher institutions and conservation districts
2) selected project consultant (March, 1979)
3) held framework conference--broad representation (May, 1979)
4) held writing conference--team composed of outstanding classroom teachers, administrators, curriculum specialists and Soil Conservation Service personnel
5) materials now undergoing final editing before being sent to state printer (this will be the trial version which will be subjected to careful evaluation during 1980)

M. PLANS FOR THE FUTURE:

1) Inservice programs for both elementary teachers (and administrators) and for conservation district personnel (resource people).
2) Test program for present materials.
3) Revision of present materials based upon test findings.
4) Publication and distribution of tested, revised version.
5) Possible extension of project to include the middle school.

N. REPORT SUBMITTED BY: James M. Garner

November 6, 1979

A. TITLE: CAMP WASKOWITZ ENVIRONMENTAL EDUCATION

B. DIRECTOR: Bill Weppler, Site Director
Camp Waskowitz
45509 S.E. 150th
North Bend, WA 98045
206/888-0686

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Survival education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Entire camp

E. PRINCIPAL STAFF: 5

CONSULTANT SERVICES UTILIZED: No

F. HISTORY:

1) Principal originators:
   Carl Venson; Harry Lemon
2) Date and place of initiation:
   1957; Highline Public Schools
3) Funding sources utilized:
   School District
4) Overall purpose:
   To develop student awareness and appreciation of environment and provide meaningful experience in social living.

G. OBJECTIVES:

1) Total involvement of students in study of natural sciences
2) Social growth of student in group-living situation

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--Outdoor School Guide
2) Free materials available:
   Brochure
3) Materials purchasable:
   Outdoor School Guide; write to: Chuck Hardy, Highline Public Schools, 15675 Ambavar Blvd., SW, Seattle, WA 98166
4) New instructional materials being developed: Yes
   4th grade
5) Materials anticipated for development:
   16mm film on Camp Waskowitz
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 45
2) Teachers adopting all of the materials: 91
3) Teachers using some of the materials: Not indicated
4) Total students using all of the materials: 3,000
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Marvista
19800 Marine View Drive
Seattle, WA 98166

Hazel Valley
402 SW 132nd
Seattle, WA 98146

Mt. View
10811 12th SW
Seattle, WA 98146

Shorewood
2725 SW 116th
Seattle, WA 98146

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (2 days)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Same materials supplied to teachers

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

1) Plant life study
2) Animal life study
3) Soil study
4) Water study
5) Forestry
6) Map and compass
7) Survival
8) Woodscraft

M. PLANS FOR THE FUTURE:

Energy study

N. REPORT SUBMITTED BY: Bill Weppler

September 27, 1979

Previous Directory References: 1972, 1973

A. TITLE: SYSTEMATIC ENVIRONMENTAL ACTION (S.E.A.)

B. DIRECTOR: Robert D. Markey
Olympia School District
1113 East Legion Way
Olympia, WA 98501
206/753-8828

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, outdoor education, population education

ADDITIONAL DESCRIPTORS: Integrated environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED:
Community Experts Advisory Committee--environmentalists to review curriculum and testing

F. HISTORY:

1) Principal originators:
   Former Curriculum Director
2) Date and place of initiation:
   August 18, 1977; Olympia School District
3) Funding sources utilized:
   Title IV-C ESEA
4) Overall purpose:
   To develop, implement and evaluate an integrative environmental education curriculum within the confines of the Olympia social studies and science disciplines, K-12

G. OBJECTIVES:

See Summary (L) below.

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--Wet is Wonderful, Birds of the Nisqually, Beaver (1st); Environments of Washington #13 (4th)
   Secondary (7-12)--Marine Environments (11/12); The Nisqually (10/11); Environmental Northwest History (10/11); The History of Energy (11)
2) Free materials available: None
3) Materials purchasable:
   Available in March 1980
4) New instructional materials being developed: Yes
   K-12

5) Materials anticipated for development:
   Nisqually Wildlife Refuge Curriculum Guides, Grades 2, 3, 5, 6, 7 and 8; Environmental Education Curriculum Packages
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 0
2) Teachers adopting all of the materials: 0
3) Teachers using some of the materials: 24
4) Total students using all of the materials: 0
5) Totals stated are definite.
6) Selected schools utilizing program materials:

Capital High School
2707 Conger Street
Olympia, WA 98502

L.P. Brown Elementary School
2000 26th Avenue N.W.
Olympia, WA 98502

Olympia High School
1302 North Street
Olympia, WA 98501

Pioneer Elementary School
1655 Carlyon
Olympia, WA 98501

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (5 days)
   Evening Classes (various areas, 1-3 credits)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Being developed for all levels

K. MATERIALS EVALUATION:

1) Evaluator:
   Private consultant firm
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary:
   Final reports will be completed by June 30, 1980

L. SUMMARY OF ACTIVITIES TO DATE:

For the school years 1977-78 and 1978-79, the Olympia School District was awarded an ESEA Title IV-C grant to develop, implement, and evaluate a conceptually-based environmental education curriculum model which would utilize the natural and human resources of the region. During the development years, three major project components were identified, developed, and refined: a conceptual curriculum model, evaluation instruments, and a series of environmental education teacher guidebooks. Third year funding for Systematic Environmental Action is required to test these products in a school setting more diverse than the schools of Olympia. This broadening of the testing base will prove the value of not only the individual products but also the total worth of the entire program to any school district.

An additional environmental education opportunity has been made available to the project. The U.S. Fish and Wildlife Service is developing an environmental education center on the Nisqually National Wildlife Refuge site and has allocated $12,000 for the packaging and dissemination of environmental education packets that relate to that site. The development of these packets following the Project S.E.A. model is essential to proper educational use of the facility and would enhance the acceptance of all Project S.E.A. materials in schools throughout the state.

M. PLANS FOR THE FUTURE:

Continued materials development, teacher training and implementation/evaluation of materials.

N. REPORT SUBMITTED BY: Robert D. Markey
September 20, 1979

A. TITLE: CISPUS ENVIRONMENTAL CENTER--OUTDOOR EDUCATION PROGRAM

B. DIRECTOR: Lloyd Rowley
2332 Cispus Road
Randle, WA 98377
206/497-7131

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED: None indicated

F. HISTORY:

1) Principal originators:
Various state and federal agencies along with local agencies under the leadership of Louis Bruno, State Superintendent of Public Instruction at that time.
2) Date and place of initiation:
January, 1970
3) Funding sources utilized:
State and local
4) Overall purpose:
Help develop an awareness in school children of their surroundings and of the natural resources.

G. OBJECTIVES: None indicated

H. MATERIALS:

1) Materials produced:
We have many guides and presentations that are suitable for all levels and materials for teachers.
2) Free materials available:
Film service
3) Materials purchasable:
Most materials are free of charge--just send request letter.
4) New instructional materials being developed:
Counselor training guide; high school
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 45
2) Teachers adopting all of the materials: None indicated
3) Teachers using some of the materials: 35
4) Total students using all of the materials: None indicated
5) Totals stated are estimated.

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: No
3) Pre-service training program: None indicated
4) Kinds of preparation programs:
   Workshop
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: Yes

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE: None indicated

M. PLANS FOR THE FUTURE: Yes

N. REPORT SUBMITTED BY: Lloyd Rowley
December 20, 1979

Previous Directory References: 1972, 1973, 1975, 1976

ERIC Documents:

ED 085 163	Outdoor Recreation Activities at Cispus
ED 089 951	Humanized Teacher Preparation at Cispus. A Compendium of Ideas on Teacher Preparation and Evaluation
ED 104 634	Manual for Cispus Evaluation Workshop
ED 104 635	Cispus Evaluation Kit for Cispus Preparatory Workshop, 1973

A. TITLE: ENCOUNTER WITH THE NORTHWEST ENVIRONMENT

B. DIRECTOR: Tony Angell
c/o Shoreline District
N.E. 158th and 20th N.E.
Seattle, WA 93155
206/365-0433

C. DESCRIPTORS: Environmental education, natural resources, outdoor education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Northwest Environmental Education Center site at Whidbey Island

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED:
A team of writers were the principal developers of content of handbook along with the project director.

F. HISTORY:

1) Principal originators:
   Tony Angell; Duncan Kelso; Anyo Damoto; Frank Silkwood; Scott McGregor
2) Date and place of initiation:
   September, 1974
3) Funding sources utilized:
   Grant from Superintendent of Public Instruction
4) Overall purpose:
   A guide describing Washington's environments, both natural and urban, to be used by students in their initial study of what characterizes the Pacific Northwest.

G. OBJECTIVES:

1) To have students develop an understanding of the major natural environments within the Pacific Northwest, the essential resources within each and the degree to which these environments have been impacted upon.
2) Students will understand the major components of the urban environment how they function to serve the people, their problems and solutions.

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--"Our Northwest Legacy" (a 20-minute film of Washington's Natural Environment); Encounter with the Northwest Environment: Natural and Urban (a handbook of general study of the major environments of Washington)
   Secondary (7-12)--Same as above
2) Free materials available:
   Handbook in limited supply
3) Materials purchasable: None indicated
4) New instructional materials being developed: None
5) Materials anticipated for development:
   Revised Encounter handbook with learning activities
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: Not indicated
2) Teachers adopting all of the materials: Not indicated
3) Teachers using some of the materials: 50
4) Total students using all of the materials: several hundred
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Mt. Erie Elementary School
Attn: Steve Gerwell
41st and M. Streets
Anacortes, WA

Shoreline Schools
Attn: Dick Sacksteader
N.W. 158th and 20th N.E.
Seattle, WA 98155

Garfield High School
Attn: Larry Broder
400 23rd Avenue
Seattle, WA 98122

Special Program: N.W. Encounter
5401 West Mercer Way
Mercer Island, WA 98040

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (2 hours)
   Summer Institute (3 credits or 1 credit sessions)
   Evening Classes (as above)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   The Encounter Handbook

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

1) Student and teacher one-week surveys of Washington State using the Encounter Handbook as a study guide (1975-79)
2) A separate program (Northwest Encounter) based on the initial concepts of the Encounter Catalogue, funded for secondary school students from private foundation funds. This program has operated the past two years as a summer institute and involves the systematic study of the major forest environments with special consideration to the resources therein and their efficient and appropriate management.
3) The development of a film, Northwest Legacy, based on the handbook and introducing the 17 major natural environments of Washington State as they exist in the pristine condition.
4) Identification of specific learning locations throughout the state that provide students access to the analysis of the special conditions that exist in unique environments. For example: Desert lake and pond has appropriate learning sites at Sun Lakes and Lower Columbia wildlife refuge; Flood Plain access at Nisqually wildlife refuge and Fir Island State Game access for the Skagit River. Several hundred access sites identified.

M. PLANS FOR THE FUTURE:

Revision of handbook.

N. REPORT SUBMITTED BY: Tony Angell
October 31, 1979

Previous Directory Reference: 1975

ERIC Document:

ED 101 948 Encounter with the Northwest Environment, Natural and Urban

A. TITLE: SMALL STREAMS AND SALMONID

B. DIRECTORS: Tony Angell and Clair Dykeman
Shoreline Schools
N.E. 158th and 20th N.E.
Seattle, WA 98155
206/365-0433

C. DESCRIPTORS: Conservation education, environmental education, marine education, natural resources, outdoor education, population education, urban environmental education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Local school creek projects

E. PRINCIPAL STAFF: 1-1/4

CONSULTANT SERVICES UTILIZED:
Marine science teachers were employed in the writing of the curriculum

F. HISTORY:

1) Principal originators:
   Clair Dykeman; Tony Angell; Loren Rice; Helene Schuller
2) Date and place of initiation:
   September, 1975
3) Funding sources utilized:
   UNESCO; municipality of Metropolitan Seattle (Water Quality); Office of the Superintendent of Public Instruction (Environmental Education)
4) Overall purpose:
   Stream enhancement--both water quality and salmon population--will be enhanced through the process of teacher training and student study activity on local creeks.

G. OBJECTIVES:

1) Student will increase awareness of importance of local creeks and watersheds.
2) Students will develop skills in water quality measurement, pollution abatement and understand the laws associated with stream management.
3) Students will understand the nature of salmon cycle and develop skills (through projects) leading to enhancement of the population.

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--Water is Life (8-minute film)
   Secondary (7-12)--Water is Life (8-minute film); Fragile Resource (20-minute film); Small Streams and Salmonid (a handbook for water quality studies)
2) Free materials available: None indicated
3) Materials purchasable:
   Small Streams and Salmonid may be purchased from "Metro" Water Quality Department, City of Seattle
4) New instructional materials being developed: No
5) Materials anticipated for development: Not indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 15
2) Teachers adopting all of the materials: 15
3) Teachers using some of the materials: 150
4) Total students using all of the materials: 150
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Juanita High School
Attn: Gibb More
10601 N.E. 132nd Avenue
Kirkland, WA 98033

Bush School
Attn: Dick Armstrong
405 36th Avenue East
Seattle, WA 98112

Chief Sealth High School
Attn: Helene Schuller
2600 S.W. Thistle Street
Seattle, WA 98126

Juanita Elementary School
Attn: Lavonne Boucher
9634 N.E. 132nd
Kirkland, WA 98033

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1 day to 40 hours, 4 credits)
   Evening Classes (as above with four Saturday sessions)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   The Small Streams and Salmonid Manual; assorted handouts from management agencies useful in giving the instructors an understanding of the their roles and responsibilities.

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

1) Development of international Salmonid Enhancement Handbook for teachers. United States and Canada.
2) Development of class format and content for teacher instruction in stream rehabilitation and salmon enhancement.
3) Instructional series of classes for teachers and high school students in stream rehabilitation and salmon enhancement.
4) Adaptation of materials to high school science, social studies and industrial arts programs.
5) Community education project, stream restoration, construction of egg rearing box, coho egg plant and hatch and native run return to restored stream all successfully completed by students at pilot school--Juanita High School.
6) Cycle repeated: As in Nos. 3-5.

M. PLANS FOR THE FUTURE:

We are seeking possible expansion of action base and exploring funding for additional personnel because of public interest and school response.

N. REPORT SUBMITTED BY: Tony Angell/Clair Dykeman
September, 1979

A. TITLE: PROJECT ECOLOGY

B. DIRECTOR: Bill Guise
Highline School District
15675 Ambaum Boulevard Southwest
Seattle, WA 98166
206/433-2453

C. DESCRIPTORS: Conservation education, energy education, environmental education, marine education, natural resources, outdoor education, urban environmental education.

ADDITIONAL DESCRIPTORS: Career education, gifted/enrichment futures.

D. HEADQUARTERS: Same as B.

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes.

E. PRINCIPAL STAFF: 3 full-time equivalents.

CONSULTANT SERVICES UTILIZED:
Yes, as readers, reviewers of developed teacher materials.

F. HISTORY:

1) Principal originators:
   A team of six Highline staff members (teachers) concerned with how to "educate" a 1,300 member teaching staff who were not adequately teaching science concepts at the elementary level.
2) Date and place of initiation:
   June, 1972.
3) Funding sources utilized:
   E.S.E.A. Title III, IV-C.
4) Overall purpose:
   To infuse concepts in science, understandings in career education and futures information.

G. OBJECTIVES:

Specific objectives listed for each of the 28 units.

H. MATERIALS:

1) Materials produced:
   Primary:
   Earth Art, Exploration with Garbage, Water, Home Sweet Earth, Your Nose Knows, Your World, My World.
   Intermediate:
   The Games Cities Play, A Look at Washington Environment, Biotic Communities, Thought From You, Sunlight on the Inside, Eco-Kids Fly Off to the Forests, Eco-Kids Experiment with Air, You Are What You Eat, City Planning, Now or Never!, Glass.. Glass..Glass..And Then Recycling, Round and Round It Goes, About This Problem of Air Pollution, It's All in the Air, Energy Futures.
   Secondary Social Studies:
   Cities Then and Now, Anthropology - Ecology, Archaeology - Ecology.
   Secondary Science:
   Energy Futures, Water, The Drip Impact, Air Pollution - What You Can and Can't See, The Sky is Falling.
2) Free materials available:
   Booklet: We Are the Future describes each of the units and supporting pak's.
3) Materials purchasable: See H. 1).
4) New instructional materials being developed:
   Getting ready for preparation of energy materials 80-81 (K-12).
5) Materials anticipated for development: No response.
6) Commercial association: None.

I. IMPLEMENTATION:

1) Schools using entire set of materials: 200+
2) Teachers adopting all of the materials: 4,000 units purchased 1973-79
3) Teachers using some of the materials: Estimate 4,000+
4) Total students using all of the materials:
   We are not in a position to monitor or know.
5) Totals stated are based on distribution through sales or workshops.
6) Selected schools where the program materials are being used:

Shore Wood Elementary
23100 - 13 Mile Road
St. Clair Shores, MI 48082

Renton School District
435 Main
Renton, WA 98055

Glendening Elementary
4200 Glendening Drive
Groveport, OH 43125

University Place School District
8805 - 40th Street West
Tacoma, WA 98466

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (one day)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION:

1) Evaluator:
   JDRP approved program.
2) Pertinent published research on evaluation:
   JDRP report.
3) Unpublished research summary:
   Adoption evaluation reports, individual sites.

L. SUMMARY OF ACTIVITIES TO DATE:

Booklet: We Are the Future describes each of the units and supporting pak's.

M. PLANS FOR THE FUTURE:

Getting ready for preparation of energy materials 80-81.

N. REPORT SUBMITTED BY: Bill Guise/JoEllen McGrath
Director/Dissemination Specialist
October 2, 1979

ERIC Documents:

ED 132 002	Water (Secondary)
ED 132 003	Then and Now, and Where Do We Go From Here?
ED 132 004	Living Today with an Eye Toward Tomorrow
ED 132 005	Water (Elementary)
ED 132 006	Your World, My World
ED 132 007	Your Nose Knows
ED 132 008	Exploration with Garbage
ED 132 009	Home Sweet Earth
ED 132 010	Earth Art

ED 132 011	The Games Cities Play
ED 132 012	You Are What You Eat
ED 132 013	Biotic Communities
ED 132 014	Eco-Kids: Experiment with Air or Spaceship Earth
ED 132 015	Acting for Ecology
ED 132 016	Practice What You Preach!
ED 132 017	Eco-Kids Fly Off to the Forest
ED 132 018	Environment
ED 132 019	Who Has a Better Idea?
ED 132 020	Peabody's Time Machine
ED 132 021	Mind-Full of Ecology
ED 132 022	And Then - Recycling
ED 133 144	Ecological Smorgasbord: A Balanced Reading Diet
ED 133 145	Thoughts From You
ED 133 146	Round and Round It Goes: A Study of Ecological Cycles
ED 133 147	Please Touch -- Touching Is Living, and Living is OK
ED 133 148	This Land is Your Land
ED 133 149	It's All in the Air
ED 133 150	...About this Problem of Air Pollution
ED 133 151	Overpopulation Produces...What are We Going to Do About It?
ED 133 152	Conducting Environmental Assessment of Your Local Community
ED 133 153	From Rocks to Pots
ED 133 154	Exponential Explosions! Today...Tomorrow...?
ED 133 155	The Drip Impact
ED 133 156	Ever Stop to Think Man's Survival is Dependent on His Use of Food Resources?
ED 133 157	Food: The Challenge to Manage

ED 133 158	Natural or Organic Foods?
ED 133 159	The Sky is Falling: A Study of Particulates
ED 133 160	Air Pollution: What You Can and Can't See
ED 133 161	Archaeology/Ecology
ED 133 162	Energy Futures...
ED 133 163	Anthropology - Ecology

A. TITLE: ENERGY, FOOD AND YOU

B. COORDINATOR: Christina Peterson
Washington State Office of
Environmental Education
c/o Shoreline School District
N.E. 158th and 20th Avenue N.E.
Seattle, WA 98155
206/365-0433

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, population education

ADDITIONAL DESCRIPTORS: Nutrition education, global and local food system issues

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED:
100 plus speakers

F. HISTORY:

1) Principal originators:
J. Anthony Angell; Bill Stocklin
2) Date and place of initiation:
1975; Seattle
3) Funding sources utilized:
Office of Environmental Education (HEW), 3 years; Washington State Office of Health Education, 2 years
4) Overall purpose:
Give teachers K-12 the background, strategies, practice and materials to teach global and local issues related to energy use in the food system

G. OBJECTIVES:

Provide training and materials K-12 for teachers: by curriculum, by courses in Seattle area, and by workshops statewide.

H. MATERIALS:

1) Materials produced:
Primary (K-6) and Secondary (7-12)--Energy Food and You, revised 1979, $5.00, 350 pp. approximately
Other--Energy Food and You bibliography, $1.50, 375 references approximately
2) Free materials available:
PR sheet on the program

3) Materials purchasable:
   See No. 1 above
4) New instructional materials being developed: No
5) Materials anticipated for development: None
6) Commercial association: Not indicated

I. IMPLEMENTATION:

See Summary (L) below. Selected schools utilizing program materials:

Shorewood High School
Attn: Barbara Schulz
17300 Fremont North
Seattle, WA 98133

South Shore Middle School
Attn: Leonard Kashner
8633 53rd Avenue South
Seattle, WA 98118

Bush School
Attn: Joan Mason
405 36th Avenue East
Seattle, WA 98112

Sunny High Elementary
Attn: Susan Seiber
23232 Issaquah-Pine Lala Road
Issaquah, WA 98027

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (10 hours per workshop)
   Evening Classes (3 quarters, 36 hours each)

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

"Energy, Food and You" funded first by the Office of Environmental Education, U.S. Department of Health, Education and Welfare, is a four-year old program which in two years produced an elementary and a secondary curriculum guide of 600 pages written and tested by teachers. The guides are interdisciplinary, with activities indexed by subject area and by concept. The rationale for the program holds that the food system is a most effective topic to teach energy concepts and issues. The topic provides students with a field of action in which solutions, alternative means of energy consumption and production, are immediately available to them. The choice of the food system is also to remind students and citizens that this vital system is highly energy-dependent and therefore very vulnerable to the disruption of energy supply.

Unique attributes of the program include:

1) placing a high premium on developing excellent analytic skills. Thorough instruction is provided in how to trace everyday commodities to their origins as renewable or non-renewable resources (with BTU equivalents).

2) offering a class which acts as a weekly forum where business, government and academe can exchange information and when appropriate debate the issues of food and energy.
3) pioneering a regional model which provides students with experience in the skills of energy-related technology; skills which are transferable to the community (e.g., selecting and preparing less energy intensive food and organizing recycling programs, maintaining school gardens, and constructing solar greenhouses, food driers and flat plate collectors).
4) inadvertently providing a support system for futuristic-thinking teachers some of whom may be pessimistic in outlook but who prefer to be optimistic in the classroom.

Over the four years of the program, teachers who have participated in the college-credit course No. 385. Teachers (statewide) who have received workshop training (10 hours) No. 350. Students (K-12) who have engaged in classroom/community projects as a result of teachers' in-depth training number approximately 11,000 while students (K-12) who have had brief exposure (from teachers attending the workshops) number approximately 16,500.

M. PLANS FOR THE FUTURE:

1) Continued workshops, courses and presentations
2) Will add component to train workshop leaders

N. REPORT SUBMITTED BY: Christina Peterson
September 5, 1979

A. TITLE: TAYLOR COUNTY OUTDOOR EDUCATION PROGRAM

B. DIRECTOR: Kermit B. Bias
Grafton Middle School
225 W. Washington Street
Grafton, WV 26354
304/265-0722

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Lifetime sports, gun safety, backpacking, cross-country skiing, nature exploration

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
An ongoing outdoor education program at a 60-acre camp

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
U.S. Department of Agriculture; West Virginia Department of Natural Resources; Daisy, Bear Archery; other operating outdoor education programs

F. HISTORY:

1) Principal originators:
    Kermit Bias; Jim Reneau
2) Date and place of initiation:
    September, 1977; Taylor County
3) Funding sources utilized:
    ESEA Title IV-C; local board funds
4) Overall purpose:
    -to expose students to various activities in environment
    -to create an awareness and appreciation of the environment
    -supplement classroom learning

G. OBJECTIVES:

1) To involve students and teachers in exploration and discovery of the natural environment leading to an in-depth study of outdoor education as part of the middle school curriculum.
2) To develop an outdoor education facility to be used for exploration of the out-of-doors by middle school children.
3) To provide opportunities for independent study projects in outdoor experiences for all middle school children.
4) To promote activities (field days, field trips, overnight camping experiences, adventure programs, etc.) that develop students' appreciation of their natural surroundings.

4) To provide in-service training for teachers that will provide direction and assistance in the development of an outdoor education program.
5) To initiate a program which would supplement youth educational organizations (4-H, Boy Scouts, etc.).

H. MATERIALS:

1) Materials produced:
   Secondary (7-12)--Handouts and booklets on backpacking and orienteering; program introductions
2) Free materials available:
   Same as above
3) Materials purchasable: None indicated
4) New instructional materials being developed: Yes
   7-12
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: n/a
2) Teachers adopting all of the materials: n/a
3) Teachers using some of the materials: n/a
4) Total students using all of the materials: 600
5) Totals stated are definite.
6) Selected schools utilizing program materials:

Grafton Middle School
225 W. Washington Street
Grafton, WV 26354

Hepzidah Elementary School
Route 3
Bridgeport, WV

Knottsville Elementary School
Box 306, Route 1
Thornton, WV 26440

Flemington Elementary School
Flemington, WV

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs: None

K. MATERIALS EVALUATION: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

Our program is an activity-oriented program. Most of our work is done outside and away from the classroom setting. This means that materials for teachers to be used in the classroom are not a part of it.

We have a progressive outdoor education curriculum for grades 6, 7 and 8. Activities include: gun safety, nature exploration, tree identification, wildflowers, archery, orienteering. Eighth graders participate in a wilderness experience--either backpacking or cross-country skiing.

M. PLANS FOR THE FUTURE:

1) more in-depth nature activities
2) additional outdoor recreation activities

N. REPORT SUBMITTED BY: Jim Reneau
Coordinator
September 4, 1979

A. TITLE: KEYSER PRIMARY MIDDLE SCHOOL EDUCABLE MENTALLY RETARDED GREENHOUSE PROJECT

B. DIRECTOR: Robert D. Harman
Mineral County Schools
One Baker Place
Keyser, WV 26726
304/788-3881

C. DESCRIPTORS: Environmental education, natural resources, outdoor education

ADDITIONAL DESCRIPTORS: Special education

D. HEADQUARTERS: Keyser Primary Middle School
New Creek Drive
Keyser, WV 26726
304/788-2335

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Greenhouse

E. PRINCIPAL STAFF: 4

CONSULTANT SERVICES UTILIZED:
Horticulture professor from local college to present in-service on greenhouse management

F. HISTORY:

1) Principal originators:
   Special services staff (EMR/LD) at school
2) Date and place of initiation:
   July, 1977; Keyser Primary Middle School
3) Funding sources utilized:
   ESEA Title IV-C (improvement in local education practices)
4) Overall purpose:
   This project is designed to improve the individual self-concept of students enrolled in the primary middle school EMR program while increasing the interaction between such students and regular students of the same grade level and/or chronological age.

G. OBJECTIVES:

1) An increase in the interaction between EMR students and regular sixth-grade students will be detected through use of a sociogram.
2) The self-concepts of the EMR students will significantly be improved as measured by a standardized self-concept scale.

H. MATERIALS: None produced

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION: None

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

1) Greenhouse constructed (pre-fab kit)
2) Various curriculum examined and adopted
3) EMR students administered Piaris-Harris Self-Concept Scale as pretest
4) Sociogram being developed for spring 1980
5) Field trips to various horticulture sites arranged
6) Community involvement activities established (plant sale, presentations to nursing home)
7) Ancillary activities such as crafts established to increase interaction
8) Direct interaction in greenhouse scheduled for spring 1980

M. PLANS FOR THE FUTURE:

1) Expansion of program within school itself
2) Increased interaction between EMR students and science students

N. REPORT SUBMITTED BY: Frank Grivalsky
Title IV-C Project Coordinator
November 14, 1979

A. TITLE: MINERAL COUNTY 7TH-8TH GRADE SCIENCE CAMP

B. DIRECTOR: Robert P. Mason
Mineral County Board of Education
One Baker Place
Keyser, WV 26726
304/788-3881

C. DESCRIPTORS: Conservation education, energy education, environmental education, outdoor education

ADDITIONAL DESCRIPTORS: Science education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Actual camp operation

E. PRINCIPAL STAFF: 8

CONSULTANT SERVICES UTILIZED: No

F. HISTORY:

1) Principal originators:
   Robert P. Mason; Robert D. Harman; Gary Kalbaugh
2) Date and place of initiation:
   July, 1978
3) Funding sources utilized:
   Mineral County School Board; contributions by local industries; contributions by Regional Educational Service Agency
4) Overall purpose:
   The purpose of the camp is to provide a week of intensive workshops in science and environmental education for high ability 7th and 8th grade students to increase knowledge

G. OBJECTIVES:

1) to increase the environmental awareness of high-ability 7th and 8th grade students
2) to provide stimulating experiences in science for high-ability 7th and 8th grade students
3) to increase knowledge in science for high-ability 7th and 8th grade students by providing a week-long science experience

H. MATERIALS: Not applicable

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION: Not applicable

K. MATERIALS EVALUATION: Not applicable

L. SUMMARY OF ACTIVITIES TO DATE:

In both 1978 and 1979 approximately 50 students from Mineral, Hampshire, Pendleton, Randolph, Jefferson, Berkeley and Hardy Counties in West Virginia and Allegany and Garrett Counties in Maryland attended the week-long camp.

The camp agenda included workshops at Potomoc State College on computers and chemistry; a field trip to Finzel Swamp Nature Area at Frostburg State College; a visit to the Frostburg State College planetarium; a two-day field trip which included Cathedral State Park; the COMSAT Earth Station at Etam; the Fearnow Experimental Forest; an overnight stay at Camp Kidd near Parsons, Seneca Caverns; Seneca Rocks Recreation Area; Dolly Sods; a series of workshops which included energy, bird study, aquatic study, water analysis, compass hike, geology, the TRS-80 home computer; small group discussion and work sessions; a swimming party; recreational activities; campfires, etc.

The program was designed to promote an awareness of the scientific needs of society and how these needs can be met without destroying natural resources. A goal of this program is to increase knowledge and motivation in science for high-ability students, as well as increase the students' awareness of opportunities in science. The emphasis was on science in society, industry, nature and environment.

The camp is held from Sunday night through Friday night in July at Miwco Park, a 4-H camp. The dates for 1980 are July 6-11.

M. PLANS FOR THE FUTURE:

We plan to improve the quality of the field trips and workshops we are offering.

N. REPORT SUBMITTED BY: Robert P. Mason
September 13, 1979

A. TITLE: OUTDOOR SCIENCES AWARENESS AND APPRECIATION

B. DIRECTOR: Richard H. Beck
Doddridge County Board of Education
West Union, WV 26456
304/873-2300 or 873-1958

C. DESCRIPTORS: Conservation education, environmental education, outdoor education.

D. HEADQUARTERS: Sistersville Pike
West Union, WV 26456
304/873-2300 or 873-1958

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
We have a great deal of equipment visitors might be interested in. Visitors are welcome to accompany us on any of our outdoor activities with the students.

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:

Dr. Tom Pauley Biology Department Salem College Salem, WV	Dr. Pauley was used as a consultant in writing the proposal for our project.

F. HISTORY:

1) Principal originators:
   Mr. James Jay, for Doddridge County Superintendent of Schools
   Dr. Tom Pauley, as mentioned above.
2) Date and place of initiation:
   October, 1975 - West Union, WV.
3) Funding sources utilized:
   E.S.E.A. Title IV-C funding for 1975-76, 1976-77, 1977-78.
4) Overall purpose:
   To create an interest in all the sciences, by using the outdoors to motivate the student.
   To help the teachers to develop a broader base in science education.

G. OBJECTIVES:

To provide all students in grades K-8 with opportunities to study conservation and ecology through first-hand experiences outdoors.
To develop student awareness of the importance of the role of every organism, including man, in maintaining balanced ecosystems.

To promote activities (field trips, camping experiences, etc.) that develop students' appreciation of the beauty of their natural surroundings.
To provide directions and assistance to the elementary teachers in the development of an outdoor science program.

H. MATERIALS:

1) Materials produced:
    Elementary (K-8):
    a) A booklet explaining the objectives and activities of each grade level.
    b) List of all equipment, divided by subject matter.
    c) List of all filmstrips, divided by subject matter.
    d) Two page article, summarizing the program.
    e) An article explaining how to organize and conduct an outdoor field trip.
2) Free materials available:
    Any of the above, except a).
3) Materials purchasable: No response.
4) New instructional materials being developed: None.
5) Materials anticipated for development: No response.
6) Commercial association: None.

I. IMPLEMENTATION:

1) Schools using entire set of materials: 10
2) Teachers adopting all of the materials: 35
3) Teachers using some of the materials: 15
4) Total students using all of the materials: 1,100
5) Totals stated are estimated.
    We work at 10 different schools, but not all the teachers use us to the fullest extent that they could.
6) Selected schools where the program materials are being used:

Middle Island Elementary School
Blandville, WV 26328

Smithburg Elementary School
Smithburg, WV 26436

Carr Elementary School
Route 2
West Union, WV 26456

Center Point Elementary School
Center Point, WV 26339

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: None
4) Kinds of preparation programs:
    Workshop (we have had 3 hour workshops, and others up to 2 days)
    Summer Institute (1 week, working in cooperation with the West Virginia State Science Specialist)

Evening Classes (3 hours)
We have had all of the above at one time or another in the past 4 years. They are organized when the need arises.

5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None.

K. MATERIALS EVALUATION:

1) Evaluator:
   We tried to get our program validated by the Title IV-C people, but it was turned down. However, the Superintendent and Board of Education have continued it.
2) Pertinent published research on evaluation: No response.
3) Unpublished research summary: None.

L. SUMMARY OF ACTIVITIES TO DATE:

Our program is entirely dependent on the cooperation of the teacher. Fortunately, most teachers in our county use us as an important supplement to their own science course.

M. PLANS FOR THE FUTURE:

Any new idea that we think of or hear about, will be used in the future. As an example, we now have a county science fair that has been successfully held for 2 years. We are currently planning to try out a gun safety program for our 7th-8th graders.

N. REPORT SUBMITTED BY: Richard H. Beck
Director/Teacher
October 11, 1979

A. TITLE: REEP (RESIDENTIAL ENVIRONMENTAL EDUCATION PROGRAM)

B. DIRECTOR: R. Gingerich
Nature Education Department
Oglebay Institute
Wheeling, WV 26003
304/242-6855

C. DESCRIPTORS: Environmental education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED: No

F. HISTORY:

1) Principal originators:
   John Christie, based on a Newton, Massachusetts program
2) Date and place of initiation:
   1972
3) Funding sources utilized:
   Oglebay Institute; local school funds
4) Overall purpose:
   Provide a residential experiential program to Ohio County

G. OBJECTIVES:

1) Provide an introduction of outdoor learning skills
2) Provide an introduction of ecological concepts
3) Provide an opportunity for applying the above
4) Provide opportunities for students to develop their own interpretations of their experiences

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--Environmental Education Training Manual, $3.00, 30 pages; pond life coloring book, $1.25, 13 pages
   Other--aides to bird identification, $.50-7 pages; $.50-6 pages
2) Free materials available: None indicated
3) Materials purchasable:
   As above
4) New instructional materials being developed: Not indicated
5) Materials anticipated for development: Not indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials:
   1 city system; 1 county system; 2 private schools
2) Teachers adopting all of the materials: Unknown
3) Teachers using some of the materials: Unknown
4) Total students using all of the materials: 1,400
5) Totals stated are estimated.

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Not indicated
3) Pre-service training program: No
4) Kinds of preparation programs: No

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE: None indicated

M. PLANS FOR THE FUTURE:

High school residential programs

N. REPORT SUBMITTED BY: R. Gingerich

Previous Directory References: 1972, 1973, 1975

A. TITLE: DEVELOPMENT OF STUDENT AWARENESS AND CAPABILITY IN ENVIRONMENTAL EDUCATION

B. DIRECTOR: William E. Polley
School District of Elmbrook
16945 West North Avenue
Brookfield, WI 53005
414/782-0530

C. DESCRIPTORS: Environmental education, outdoor education

ADDITIONAL DESCRIPTORS: Ecology

D. HEADQUARTERS: 3305 Lilly Road
Brookfield, WI 53005
414/781-3500

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 4

CONSULTANT SERVICES UTILIZED:
Directors and naturalists of Schlitz Audubon Center, River Edge Center and Wehr Nature Center (Whitnall Park); Environmental Education Consultant from the Wisconsin Department of Public Instruction; local landscape architects; Environmental Education Director, Waukesha School System

F. HISTORY:

1) Principal originators:
Keith Carlson and James Cramer, Biology teachers, Brookfield East High School; William E. Polly; A. O. Smith, principal, Brookfield East High School
2) Date and place of initiation:
July/August, 1974
3) Funding sources utilized:
Kiwanis/Key Club project for partial site purchase; school district funds for partial site purchase and development; ESEA Title IV-C for program and site development and program implementation.
4) Overall purpose:
To develop a local student population which is aware of, and concerned about the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations, and commitment to work individually and collectively toward solutions to current problems and the prevention of new ones.

G. OBJECTIVES:

1) Development of program
2) Development of site
3) Implementation of program

H. MATERIALS:

1) Materials produced:
    - Primary (K-6)--Twenty study units/laboratory procedures/Teacher Guides for the elementary level; an eight-page elementary teacher handbook entitled, "Facts About the Elmbrook Nature Center."
    - Secondary (7-12)--The senior high school one-semester Ecology course which is now part of the science curriculum at both high schools; 29 study units and/or laboratory procedures for the secondary level
    - Other--Twelve trail guides (4 each for primary, upper elementary, and secondary/adult levels); a four-color map/brochure for use by all Nature Center users

    These materials have been evaluated by environmental education specialists and are presently in the printing stage for dissemination to, and use by all public and non-public professional staff of the district as well as Wisconsin Department of Public Instruction personnel.
2) Free materials available: None
3) Materials purchasable:
    The above materials will be available when printed, probably after January 1, 1980; price to be determined.
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set (K-6) materials: 16
    Schools using entire set (7-12) materials: 2
2) Teachers adopting all of the materials: 0
3) Teachers using some of the materials: 25-30
4) Total students using all of the materials: 50 (K-6)/125 (7-12)
5) Totals stated are estimated (1,2,3)/definite (4).
6) Selected schools utilizing program materials:

Brookfield East High School
3305 Lilly Road
Brookfield, WI 53005

Brookfield Elementary School
2530 N. Brookfield Road
Brookfield, WI 53005

Fairview South Elementary School
3525 Bermuda Boulevard
Brookfield, WI 53005

St. John Vianney School
17500 W. Beghardt Road
Brookfield, WI 53005

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    - Workshop (1 day)
    - Other--slide/tape, question and answer materials handout for all elementary schools (16), staff awareness presentation (1 to 1-1/2 hours).

K. MATERIALS EVALUATION:

1) Evaluator:
   Joseph Vitale, Director of Environmental Education, Waukesha Public Schools; Jack Finger, Naturalist, Waukesha Public Schools
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None

L. SUMMARY OF ACTIVITIES TO DATE:

1) Materials listed above under H-1a, b and c

2) Site development of the 17-acre center is a matter of visual record, and except for ongoing continual improvements in future years, is essentially complete and available for use by all. Major features are:

   a) Excavation and creation of the pond.
   b) Layout and building of four nature trails--red, blue, yellow and green with appropriate station markers and wooden bridging.
   c) Extensive shrub and tree planting which in time will serve as natural barriers to unauthorized access as well as greatly extending the aesthetic value.
   d) Construction of two talk center/lecture and discussion areas plus a pier for the pond.
   e) Construction and placement of barriers to trail bike and snowmobile incursion consisting of telephone pole sections placed vertically in the ground, steel highway guardrail along the access road, and approximately 1550 feet of cyclone fence and additional shrub plantings in selected areas.
   f) Working up and planting a one-half acre prairie plot and layout of succession plots.
   g) There is the possibility of the Kiwanis Club of Brookfield designing and erecting a combination visitor's center/classroom/storage building adjacent to the site.

3) Program implementation has been occurring during the past 18 months and consists of:

   a) Sixteen awareness/question-and-answer presentations including two slide/tape audio-visual procedures plus program handouts to our nine elementary faculties, six non-public faculties, and the Leland faculty.
   b) Two similar presentations to the Board of Education.
   c) Two similar presentations to 90 teachers at the district-wide inservice in March of 1979 where it received the highest teachers rating of 16 sectional titles offered.
   d) Three on-site tours after school for elementary teachers in the springs of 1978 and 1979.
   e) On-site tour and tape/slide awareness presentations to the Kiwanis Club of Brookfield, who instituted a cooperative fund-

raising program with the Brookfield East High School Key Club to purchase the original 6.5 acres of the site.

f) A very successful all-day, on-site inservice this past summer for 14 interested teachers who participated of their own free will and interest on their own time with no remuneration except the ultimate benefit for their students.

g) The one-semester Ecology course developed as part of the project and piloted at Brookfield East High School has now become part of the science curriculum in both senior high schools and enjoys a total enrollment of 100-150 students per year between them.

h) Between 20 and 25 elementary classes have used the site including public and non-public schools and summer school science enrichment classes with the peak day receiving approximately 250 students. There is no hard data on this. The difficulty in obtaining it is the fact that project staff is busy teaching their own classes full time and no one can be on duty to receive the evaluation sheets each teacher is supposed to fill out.

i) In addition to the Ecology course students at the secondary level, all biology students at Brookfield East High School make use of the site for field studies during work on their ecology unit. This amounts to about 80 percent of the sophomore class in any given year.

j) Advanced course biology students also use the site in their work for research projects.

M. PLANS FOR THE FUTURE:

Complete implementation with staff of all materials and Nature Center use.

N. REPORT SUBMITTED BY: William E. Polley

September 18, 1979

A. TITLE: ELKHART LAKE-GLENBEULAH K-12 INTEGRATED ENVIRONMENTAL EDUCATION PROJECT

B. DIRECTOR: Suzanne Simon
Joint School District No. 1
201 N. Lincoln Street
Elkhart Lake, WI 53020
414/876-3381

C. DESCRIPTORS: Conservation education, environmental education, outdoor education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED:
Project ICE; University of Wisconsin-Green Bay professors; many workshops and conferences

F. HISTORY:

1) Principal originators:
   Harry Goetz, School District Superintendent
2) Date and place of initiation:
   September, 1977; Elkhart Lake, Wisconsin
3) Funding sources utilized:
   ESEA Title IV-C
4) Overall purpose:
   To develop an environmental education program for all grades and subjects K-12 emphasizing the unique characteristics, problems and resources of the Elkhart Lake area.

G. OBJECTIVES:

1) Train teachers in environmental concepts and teaching techniques
2) Development of lesson units at all grade levels and subject areas emphasizing local issues and concerns
3) Implementation of lessons of which many have a community field trip component

H. MATERIALS:

1) Materials produced:
   All material is in the development stage.
   Other--Local community resource guide
2) Free materials available: None
3) Materials purchasable:
   K-12 lesson plans--cost will be for duplicating at 10¢ per page
4) New instructional materials being developed:
   See above
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 3
2) Teachers adopting all of the materials: 0
3) Teachers using some of the materials: 55
4) Total students using all of the materials: 900
5) Totals stated are estimated.
6) Selected school utilizing program materials:

Elkhart Lake-Glenbeulah Schools
201 N. Lincoln Street
Elkhart Lake, WI 53020

J. TEACHER PREPARATION: None

K. MATERIALS EVALUATION:

1) Evaluator:
   Dennis Bryan, Education Department, University of Wisconsin-Green Bay
2) Pertinent published research on evaluation: None indicated
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

It is very difficult to summarize all of our activities. Basically every teacher K-8 has done at least six environmental lessons focusing on local aspects of the problem. Many of the lessons include field trips; each class goes on at least one if not two field trips a year.

At the high school most teachers are doing lessons related to their subjects and grade levels, including extensive field trips. This includes a new course for low level ninth graders in environmental science instead of the traditional physical science course.

We have also developed a summer school program. Each year we have had a different focus; freshwater ecology, succession, geology and land use in Wisconsin, and environmental studies through photography.

M. PLANS FOR THE FUTURE:

We will continue improving the lessons we're working on. The program as funded will end this June.

N. REPORT SUBMITTED BY: Suzanne Simon
September 12, 1979

A. TITLE: SCIENCE AND ENVIRONMENTAL MONITORING (SEM)

B. DIRECTOR: R. E. Showers
1415 East Walnut Street
Green Bay, WI 54301
414/497-3911

C. DESCRIPTORS: Natural resources.

D. HEADQUARTERS: Same as B.

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Second semester 1979-1980 testing following the specs of industry. Original projects.

E. PRINCIPAL STAFF: 1 to 3

CONSULTANT SERVICES UTILIZED:
Dr. George O'Hearn of U.W.G.B. has been consultant and evaluator.

F. HISTORY:

1) Principal originators:
   R. E. Showers
   Phillip S. Ranstad
   John Benson
2) Date and place of initiation:
   1973 in Green Bay. We had talked about the course. We wrote objectives, a rationale, and went through board approval.
3) Funding sources utilized:
   We have had two Title IV grants: 1978-79, 1979-80.
4) Overall purpose:
   Our emphasis is understanding what must be monitored in terms of the leading industrial activities of our city. Paper mills, cheese plants, sewage disposal, power plants.

G. OBJECTIVES:

See Science and Environmental Monitoring Guide.

H. MATERIALS:

1) Materials produced:
   Secondary (7-12):
   Science and Environmental Monitoring Guide. We have a complete one year outline with a week by week guide.

2) Free materials available:
   Limited quantities of outlines, objectives, and sample week plans.
3) Materials purchasable: No response.
4) New instructional materials being developed: None.
5) Materials anticipated for development: No response.
6) Commercial association: None.

I. IMPLEMENTATION:

1) Schools using entire set of materials: 1
2) Teachers adopting all of the materials: 0
3) Teachers using some of the materials: 5
4) Total students using all of the materials: 18
5) Totals stated are definite.
6) Selected schools where the program materials are being used:

East High School
1415 East Walnut
Green Bay, WI 54301

Our last Title IV grant expressly provided that we make no attempt to disseminate our materials.

J. TEACHER PREPARATION:

1) Consultative service available: None
2) In-service education program: None
   1) and 2) could be provided.
3) Pre-service training program: None
4) Kinds of preparation programs: No response.
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: None

K. MATERIALS EVALUATION:

1) Evaluator:
   Yes, but evaluator not indicated.
2) Pertinent published research on evaluation: No response.
3) Unpublished research summary:
   Final evaluation report for "Science and Environmental Monitoring".

L. SUMMARY OF ACTIVITIES TO DATE:

We have taught three years of the subject. Surveys show that students did enjoy the course and did give it better than average grades. Students have gained skills in environmental monitoring in many areas. They have had opportunities to develop skills in team work, data collecting, data displaying, and report presenting. Students recognized that the course was "different" but most of them made a good adjustment.

The teachers wrote the course and then made two rewrites of the material.
The greatest strength of our course has been the continuing support of our industry advisory board. Representatives of local industries meet four times a year to make suggestions, review materials, plan field trips, and hear reports. Our industry friends have donated expensive test equipment and have been most supportive of our program. This warm connection with the schools has been a significant force in shaping the program.
If the school abandons the SEM program as an economy measure we will lose a significant forward step.
We have extensive plant visitation schedule which brings exceptional student community involvement.

M. PLANS FOR THE FUTURE:

We are trying to continue our program. Our school system like many is responding to the economic crunch by slashing programs regardless of merit.
This was a factor in my accepting an emeritus teacher position We have a successful new approach to science teachers going down the drain because it is not traditional.

N. REPORT SUBMITTED BY: R. Showers

Originator and one of four teachers
September 12, 1979

A. TITLE: LEAF (LANGUAGE, ENVIRONMENT AND FAMILIES)

B. COORDINATOR: Richard Skyles, Principal
Monroe Elementary School
55 S. Pontiac Drive
Janesville, WI 53545
608/754-0271

C. DESCRIPTORS: Environmental education

ADDITIONAL DESCRIPTORS: Oral and written communication skills development

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Primary classroom teacher-pupil activities

E. PRINCIPAL STAFF: 0

CONSULTANT SERVICES UTILIZED: None indicated

F. HISTORY:

1) Principal originators:
   Teacher and principal of Monroe School
2) Date and place of initiation:
   May, 1973
3) Funding sources utilized:
   ESEA Title III
4) Overall purpose:
   1) Development of written and oral communication skills through ecology
   2) Parent involvement
   3) Awareness of our environment

G. OBJECTIVES:

Same as F-4 above

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--LEAF Activity Guide for Teachers (280 pages)
2) Free materials available: Not indicated
3) Materials purchasable:
   LEAF Activity Guide for Teachers, $9.00, including postage
4) New instructional materials being developed: None
5) Materials anticipated for development: Not indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 10
2) Teachers adopting all of the materials: 80
3) Teachers using some of the materials: 150
4) Total students using all of the materials: 231
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Van Buren School 1515 Lapham Janesville, WI 53545	Monroe School (original project) 55 So. Pontiac Drive Janesville, WI 53545
Harrison School 760 Princeton Road Janesville, WI 53545	Hillcrest School Route 4 Janesville, WI 53545

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
    Workshop (2-3 days)
    Summer Institute (if requested, 2-3 days)

K. MATERIALS EVALUATION:

1) Evaluator:
    Nationally validated through a three-man federal team
2) Pertinent published research on evaluation: None
3) Unpublished research summary: None indicated

L. SUMMARY OF ACTIVITIES TO DATE:

A wide variety of ecology activities are being used in this project. Students participate daily in such projects as the school garden, seasonal field trips, observation walks on the school nature trail, planting trees and flowers on the school grounds, building terrariums, caring for animals, picking up litter and building bird feeders.

Stories, poems, and pictures created by the students in response to both indoor and outdoor experiences are kept in individual folders which are evaluated periodically.

As part of the project, teachers have written a resource guide which is available to other teachers of young children.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Richard Skyles

December 8, 1979

ERIC Document:

ED 149 843 Language, Ecology, and Families (L.E.A.F.)

A. TITLE: LOCAL WATERSHED PROBLEM STUDIES (LWPS)

B. DIRECTOR: Vicki K. Vine
Water Resources Center
University of Wisconsin-Madison
1975 Willow Drive
Madison, WI 53711
608/262-3577

C. DESCRIPTORS: Conservation education, environmental education, urban environmental education

ADDITIONAL DESCRIPTORS: Nonpoint source pollution, water pollution, land use

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
Three consultants are employed to review curricula developed each year.

F. HISTORY:

1) Principal originators:
   Wesley F. Halverson
2) Date and place of initiation:
   June, 1977; Cooperative Educational Service Agency 16
3) Funding sources utilized:
   ESEA Title IV-C funding through the Wisconsin Department of Public Instruction; Environmental Protection Agency-Washington County Project
4) Overall purpose:
   Development and dissemination of school curricula concerning soil and water resources.

G. OBJECTIVES:

1) Curriculum teachers will have improved their understanding of local, state and regional nonpoint source water pollution problems by attending a week-long training workshop before the end of July. Teachers will demonstrate their understanding of nonpoint pollution by submitting a unit outline and curriculum work plan which must be judged acceptable by the Project Director and the Washington County Project staff. The following criteria will be used to evaluate unit outlines:

   -relevance to water quality goals established by the 92nd U.S. Congress in Public Law 92-500
   -continuity of objectives and activities
   -content accuracy
   -appropriate content and format for designated grade level and subject area(s)
   -inclusion of novel approaches and activities

Curriculum work plans will be judged acceptable if unit writing is scheduled early enough to be complete prior to the teaching deadline. The Project Director and Washington County Project staff will work individually with teachers to improve unacceptable unit outlines and curriculum work plans.

2) Curriculum teachers will develop units of study for students that meet project criteria stated in project Objective 1 and which are judged appropriate for designated grade levels and subject areas by the Project Director and Washington County Project staff. The units will be written with assistance from the Project Director and Washington County Project staff before March. Copies of teachers' units will be in the project files.

3) Curriculum teachers will teach, test and revise their units. Units should be taught at the times indicated on the approved teachers' work plans during the 79-80 school year. When the units are taught, a pre- and posttest developed for each unit by Washington County Project staff will be administered to students to record student knowledge gains. Test validity shall be established by a control group, experimental design from Campbell and Stanley (1963). Based on the results of the tests and on the teachers' classroom teaching experience, revisions that improve the unit will be made. Evidence of the accomplishment of this objective will be copies of the original unit, pre- and posttests and the revised unit in the project files by the end of May.

4) Washington County Project staff, the Media Program Developer and the Project Director will compile curricula guidebooks from revised units which show significant knowledge gains (P .05) and which meet the project criteria and outside consultants' standards. Curricula developed during the previous project year will be compiled before September. Draft copies will not be scheduled for printing until they have achieved an overall mean rating of 2.5 (3 = maximum) on a Likert-type scale from Steering Committee members and Diffusion Team teachers. The evaluation instrument will be developed by an ad hoc committee of Steering Committee members and Diffusion Team teachers. Revisions necessary after this evaluation will be compiled before November.

5) The Diffusion Teams, Project Director and Media Program Developer will promote the use of the Local Watershed Problem Studies curricula by conducting a minimum of one inservice presentation in each public school district or nonpublic school member of the project consortium requesting a workshop by the end of April. Evidence of the inservice training will be the correspondence made with participating teachers and the program agenda. The effectiveness will be measured by a questionnaire survey developed by the Media Program Developer, given to inservice participants at the end of the workshop, as well as by an unstructured, open-ended interview given to six randomly chosen participants of each workshop by the end of the project

year. The results should indicate that 25 percent of the participants have used part of the recommended curricula.

6) Curriculum teachers will have improved their understanding of local nonpoint source water pollution problems by attending a week-long training workshop before the end of July. Teachers will demonstrate their understanding of nonpoint pollution by submitting community project topic guidelines judged acceptable by the Project Director and Washington County Project staff. The following criteria will be used to evaluate topic guidelines:

    -discussion of potential community projects
    -identification of resource information sources
    -identification of local resource people

    The Project Director and Washington County Project staff will work individually with teachers to improve unacceptable topic guidelines.

7) Participating students will survey their community resources and sect a water quality issue to study before the eighth month of the project. Their teacher will evaluate whether the issue is appropriate for the student's subject area and meets topic guidelines on an evaluation instrument the teacher develops. The water quality issue must achieve an overall mean rating of 2.5 (3 = maximum) on a Likert-type scale before students continue the community project study.

8) The participating students and their teacher will research a local water quality issue and propose a community project plan to an evaluation team (building principal, natural resource agent, and a parent of a participating student). They will evaluate the plan on an instrument the Project Director develops later. The project plan must achieve a mean rating of 2.5 (3 = maximum) on a Likert-type scale before implementation occurs. The plan must be proposed by the end of the third week in April.

9) The participating students and their teachers will complete the community project and submit a summary report to consultants by the end of the project. They will evaluate the project with an instrument they develop later and select the best community project submitted to receive an award and certificate of achievement from the County Board of Supervisors. A random phone survey on the adult community and a random interview held at a popular community center conducted by cooperating students and their teacher will also measure project success. Ten percent of the survey respondents should know about the community project. The interview schedule will be developed by the Washington County Project staff.

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--Elementary Activity Guide
   Secondary (7-12)--High school and middle school multidisciplinary curriculum materials
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed:
   A video tape program is being developed for teachers describing the curriculum. Another video program is being developed which describes the project goals and organization.
5) Materials anticipated for development:
   We will be developing "parent packets," a summary for the parents of students using the LWPS curricula which describes 1) current water resources issues, 2) what the student is studying regarding water resources, and 3) an activity related to the school curricula for the parent and student to complete at home.
6) Commercial association: None

I. IMPLEMENTATION:

We are just beginning the dissemination of LWPS curricula with the project consortia schools. Selected schools utilizing program materials:

Hartford Central School
60 Mills Street
Hartford, WI 53027

Silverbrook Middle School
120 N. Silverbrook Road
West Bend, WI 53095

Kettle Moraine High School
345 Oak Crest Drive
Wales, WI 53183

Muskego Elementary School
S75 WI7476 Janesville Box 4
Muskego, WI 53150

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   Workshop (1-3 hours)
   Summer Institute (1 week)

K. MATERIALS EVALUATION:

1) Evaluator:
   Wesley F. Halverson (in progress)
2) Pertinent published research on evaluation: None
3) Unpublished research summary:
   In process

L. SUMMARY OF ACTIVITIES TO DATE:

Local Watershed Problem Studies (LWPS) is an environmental education curriculum development program in Wisconsin that employs an intensive teacher-center approach. Participating K-12 teachers receive extensive environmental training, design study units, pilot-teach their units and disseminate the completed curricula to other teachers.

Program staff train the teachers, edit their study units, evaluate student performance during pilot-teaching, and produce curricula guides containing learning activities from the most effective study units. Case studies are written by school students who do community projects on water quality problems. Exemplary case studies are printed in the curriculum guides. Dissemination occurs at teacher in-service workshops conducted by trained teachers. LWPS staff publicizes the in-service workshops and coordinates scheduling.

Program funding comes from two sources: U.S. Environmental Protection Agency and the Elementary and Secondary Education Act Title IV-C, which is administered by the Wisconsin Department of Public Instruction and Cooperative Educational Service Agency 16.

The program has brought about new cooperation between members of a large school district consortium (70,000 students), staff of resource planning and management agencies, local members of lake districts, county and city governments, non-government organizations and private industry.

M. PLANS FOR THE FUTURE:

If funded, the proposed project elements will encourage the formation of other school consortia statewide. Teacher seminars and project planning meetings will interface the proposed project staff with school district administrators and school teachers in three regions of Wisconsin. The LWPS curricula developed in CESA 16 will be a catalyst for the development of localized curricula in new areas.

N. REPORT SUBMITTED BY: Vicki Vine
September 27, 1979

A. TITLE: FALLEN TIMBERS ENVIRONMENTAL CENTER

B. DIRECTOR: George Howlett Jr.
Fallen Timbers Environmental Center
c/o Seymour Community Schools
Seymour, WI 54165
414/833-2304

C. DESCRIPTORS: Conservation education, environmental education, natural resources, outdoor education.

ADDITIONAL DESCRIPTORS: Environmental ethics, aquatic environment education, forest management.

D. HEADQUARTERS: (Mailing address)
c/o Seymour Community Schools
Seymour, WI 54165
414/833-2304

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Site location: County Highway PP, Town of Black Creek, WI.

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
Northeastern Wisconsin Vocational and Technical School for preliminary site plan. Project I.C.E., CESA #9, planning grant and supervision of E.S.E.A. III-C, Teacher training grant.

F. HISTORY:

1) Principal originators:
    5 area school districts and C.E.S.A. #9
    Seymour, Ashwaubenon, W. De Pere, Little Chute, Pulaski school districts and Fox Valley Tech district.
2) Date and place of initiation:
    Green Bay, Wisconsin, at C.E.S.A. #9, preliminary organization November, 1974.
3) Funding sources utilized:
    Fort Howard Paper Foundation - site purchase
    N.D.E.A. III - Materials
    E.S.E.A. IV-B - Materials
    S.E.E.A. IV-C - Teacher training and activities development
    Operation funding by fee membership of districts
4) Overall purpose:
    To serve as an outdoor field classroom for any outdoor activities which can be taught within the site potentials.

G. OBJECTIVES:

No response.

H. MATERIALS:

1) Materials produced:
   See suggested curriculum.
2) Free materials available:
   Site map.
3) Materials purchasable:
   Field guides available through Project I.C.E., C.E.S.A. #9, 1927 Main, Green Bay, WI 54301.
4) New instructional materials being developed:
   K-12 and vocational tech.
5) Materials anticipated for development: No response.
6) Commercial association:
   Fallen Timbers Field Guides are available through Project I.C.E., C.E.S.A. #9, 1927 Main, Green Bay, WI 54301.

I. IMPLEMENTATION:

1) Schools using entire set of materials: 21
2) Teachers adopting all of the materials: No response
3) Teachers using some of the materials: 600
4) Total students using all of the materials: 1,300
5) Totals stated are definite based on membership of sustaining member districts.
6) Selected schools where the program materials are being used:

Black Creek Elementary School
Black Creek, WI 54106

Notre Dame Lowes School
DePere, WI 54115

Westwood Elementary School
DePere, WI 54115

Wrightstown High School
Wrightstown, WI

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes, connected with St. Norbert College, DePere, WI. Education Department.
4) Kinds of preparation programs:
   E.S.E.A. IV-C grant 76-77 provided for 4 hours inservice training for K-8 teachers in member schools.
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   The Nature Field Trip, available at rental cost from Project I.C.E., C.E.S.A. #9, 1927 Main, Green Bay, WI 54301.

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

The Fallen Timbers project is in the fifth year of serving as an outdoor activities base for member school districts with activities designed for use K-12. The activities are mostly hands-on student centered. The program covers all seasons. Special emphasis is given to forest conservation and management because of the site characteristics and the timber based paper mill economy of the Fix River Valley. Nearly all students at the K-8 level attend the Center one or more times a year. A sequenced curriculum helps teachers and staff plan the use of more than 100 field activities available.

Outside (non-member) school classes attend on a time available basis and daily student fee cost. High school use is moderate. Class scheduling interferes with 100% use at 9-12 level.

M. PLANS FOR THE FUTURE:

Forest management conservation
Survival activities
Native and old time crafts

N. REPORT SUBMITTED BY: George Howlett Jr.
Director
September 4, 1979

A. TITLE: TOMAHAWK'S PROJECT LEARNING TREE K-12

B. DIRECTOR: Mrs. Sandra Jacobson
School District of Tomahawk
Elementary School-Armory Drive
Tomahawk, WI 54487
715/453-2210

C. DESCRIPTORS: Conservation education, environmental education, outdoor education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 10

CONSULTANT SERVICES UTILIZED:
Mr. David Engleson, staff person from Wisconsin Department of Public Instruction

F. HISTORY:

1) Principal originators:
   Ralph Johnson (superintendent); Herb Sosinsky, Ernest Junker, Don Hendrick (principals); Mike Bailey (school board; Tom Kolstad; Don Linteveur; Wally Halverson; Dick Zillman; Marvelene Sosinsky; Anne Koblish; Sandy Jacobson)
2) Date and place of initiation:
   November, 1977
3) Funding sources utilized:
   ESEA Title IV-C
4) Overall purpose:
   There is a definite need to develop educational leadership regarding the learning opportunities available to our students involving the school forest. The Tomahawk School community will adopt/adapt the concepts and activities found in "Project Learning Tree." A plan will be developed to utilize the school forest as an educational tool for public and private school teachers and students.

G. OBJECTIVES:

1) Summer workshop for four weeks to modify "Project Learning Tree" to our environment.
2) By end of summer begin plans to implement and map out teaching strategies.
3) By end of summer each committee member be trained as a leader of an all in-service program school year 1978-1979.
4) Evaluation workshop (3 days in June) will tabulate results of questionnaires throughout the year. They will make recommendations to the teaching staff. Administration and school board to improve and ensure an ongoing school forest program.

H. MATERIALS:

1) Materials produced:
    Primary (K-6)--texts/guides taken from Project Learning Tree and adopted to our environment
    Secondary (7-12)--texts/guides
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 0
2) Teachers adopting all of the materials: 103
3) Teachers using some of the materials: 103
4) Total students using all of the materials: 2,040
5) Totals stated are estimated.

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs: None

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

Grades	
Pre-K	objects-walks-shapes
1st	objects-color-design
2nd	plants, fossil, sensory
3rd	beaver-pond study, ecosystem
4th	Wisconsin history, leaves, poetry, habitat
5th	Indian village, snow drift, soil study
6th	nature walk, soil plot, insect, fallen log, tracks
7th	ecology, English, traps, leaf collection, plant, deer food study
8th	water fowl, plants, traps, soil and water sampling
9th	small animal study, trail improvement, map exercise
10th	history, farm site, small mammal study, art, foreign language
11th	creek study, population and home range, snowshoe hare, photography
12th	survey, map school forest area, stream study, photography

Grades 7 through 12 are broken in stations and subject area. All have Adopt-a-Tree.

M. PLANS FOR THE FUTURE:

1) Adding more to kindergarten
2) When a coordinator is named there will probably be added activities.

N. REPORT SUBMITTED BY: Mrs. Sandra Jacobson
September 18, 1979

ERIC Document:

ED 182 144 Tomahawk School Forest Curriculum

A. TITLE: FOX RIVER SANCTUARY ECOLOGICAL STUDY PROGRAM/
WAUKESHA PUBLIC SCHOOLS ENVIRONMENTAL EDUCATION
LEARNING CENTER

B. DIRECTOR: Joseph A. Vitale
Environmental Education
Waukesha Public Schools
222 Maple Avenue
Waukesha, WI 53186
414/544-8874

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Students in action; Environmental Education Learning Center; self-guided nature awareness trail

E. PRINCIPAL STAFF: 2

CONSULTANT SERVICES UTILIZED:
Pre-test/Post-test Development K-4 (12 hours)

F. HISTORY:

1) Principal originators:
   Joseph V. Vitale; summer project staff
2) Date and place of initiation:
   June 9, 1977
3) Funding sources utilized:
   ESEA Title IV-C
4) Overall purpose:
   Involve, on a district-wide basis, all students with a meaningful hands-on environmental education program.

G. OBJECTIVES:

Educate the students in the school district of Waukesha in such a manner as to prepare them to make intelligent decisions regarding their immediate environment and the earth.

H. MATERIALS:

1) Materials produced:
   K-8--Guides are prepared for all staff members; preparation workbooks/guides are made available to all students; slides, resource books and video tapes are also available.
2) Free materials available:
   There are no dissemination funds available, therefore, free materials are available in an "in-house" basis only.

3) Materials purchasable:
   We do not solicit sales, however, we do try to accommodate requests for guides, if possible.
4) New instructional materials being developed:
   In-house use only
5) Materials anticipated for development:
   Staff motivators and student lessons--both on video tapes
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 18
2) Teachers adopting all of the materials: 300
3) Teachers using some of the materials: 30
4) Total students using all of the materials: 10,000
5) Totals stated are definite.
6) Selected schools utilizing program materials:

Bethesda
730 South University
Waukesha, WI 53186

Banting
2019 Butler Drive
Waukesha, WI 53186

Hadfield
618 Oakland
Waukesha, WI 53186

Lowell
140 North Grandview Blvd.
Waukesha, WI 53186

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1/2 day)
   Evening Classes (1 semester)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers:
   Guides, hands-on experience, slides

K. MATERIALS EVALUATION: Internal

L. SUMMARY OF ACTIVITIES TO DATE:

Waukesha had no environmental education program prior to Title IV-C grant which started in June, 1977. Federal funding is now concluded. Local district funds complete environmental education program in which 10,000 (K-8) participate.

The Fox River Sanctuary project is a hands-on approach conducted at our 88-acre outdoor site--Fox River Sanctuary. The activities include awareness development, soil, water and air testing, data gathering, data interpretation, drawing inferences, classifying, predicting and measuring.

M. PLANS FOR THE FUTURE:

Secondary political action involvement.

N. REPORT SUBMITTED BY: Joseph A. Vitale
September 4, 1979

ERIC Document:

ED 118 342 Outdoor Education Guide-Handbook

A. TITLE: WAUSAU SCHOOL FOREST

B. COORDINATOR: Hugh Curtis
School District of Wausau
407 Grant Street
Wausau, WI 54401
715/845-5279

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Museum

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: Not indicated

F. HISTORY:

1) Principal originators:
   G. W. Bannerman; E. H. Boctcher; Ben Hythema
2) Date and place of initiation:
   1941
3) Funding sources utilized:
   Local only: donations, student activities, pulp wood sales
4) Overall purpose:
   Provide teachers in the district an excellent place to conduct outdoor education activities--day or resident.

G. OBJECTIVES:

Provide a better education for students of this school district.

H. MATERIALS:

1) Materials produced:
   Primary (K-3)--classroom lessons utilizing the environment, (100 pages)
   Other--outdoor education residence manual (125 pages)
2) Free materials available: None indicated
3) Materials purchasable:
   2.6¢ per page from School District of Wausau, Attn: Hugh Curtis
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 13
2) Teachers adopting all of the materials: Unknown
3) Teachers using some of the materials: 50
4) Total students using all of the materials: Unknown
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

John Marshall
1918 Lamont Street
Wausau, WI

Jefferson
500 W. Randolph
Wausau, WI

Franklin
1509 N. 5th Avenue
Wausau, WI

Lincoln
720 S. 6th Avenue
Wausau, WI

J. TEACHER PREPARATION:

1) Consultative service available: No
2) In-service education program: No
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (1 evening)

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

All fifth-grade students spend 2-1/2 days in residence at the Center during the winter. All sixth-grade students spend five days in residence during the spring or fall. All other groups are voluntary and vary from first grade overnight programs to high school archaeology classes. Twenty-two buildings at the camp have been constructed by industrial education students and financed with non-tax money.

M. PLANS FOR THE FUTURE: None

N. REPORT SUBMITTED BY: Hugh Curtis
September 7, 1979

Previous Directory Reference: 1976

ERIC Documents:

ED 144 824 Instructional Guide for Outdoor Education, K-3

ED 144 825 Outdoor Education Camp Director's Manual

A. TITLE: ECO-LAB ENVIRONMENTAL RESOURCE CENTER

B. DIRECTOR: Robert Larson
Laramie County School District #1
R.R. #1, Box 550A
Cheyenne, WY 82001
307/634-3152

C. DESCRIPTORS: Conservation education, energy education, environmental education, outdoor education

D. HEADQUARTERS: Southwest Drive
Cheyenne, WY 82001
307/634-3152

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Nature trail; reference library, outdoor laboratory; pond

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED:
Community Council; Dr. William Edwards, Ecologist, Laramie Community College; Dr. Bob Eichea, Project Educator, University of Wyoming

F. HISTORY:

1) Principal originators:
Robert Larson; Dr. Bill Edwards
2) Date and place of initiation:
1971
3) Funding sources utilized:
ESEA Title III; school district
4) Overall purpose:
To develop outdoor activities and models

G. OBJECTIVES:

1) To produce a citizenry that is knowledgeable about environmental problems.
2) To produce a citizenry that is aware of how to help solve these problems and motivated to work toward their solutions.

H. MATERIALS:

1) Materials produced:
Elementary Environmental Activities
May 1975 252 pages
Environmental activities that will supplement the science curriculum. A series of activities for grades K-6. Resource and reference materials are listed. Price $5.00

Environmental Activities, Junior High School
1973 88 pages
Environmental and science activities--lesson plans with behavioral objectives, directions to teacher, directions to students, materials and resources for the activity.
Price $3.50

Summer Environmental Activities, Junior High School
1974 124 pages
Environmental and science activities--lesson plans for teachers of grades 7-9. These activities involve tests for soil, water and air. Resources and reference materials are listed. Price $4.25

Environmental Activities, Senior High
1974 83 pages
Environmental and science activities--lesson plans with behavioral objectives, directions to teacher, directions to students, materials and resources for the activity.
Price $3.25

ECO-LAB Environmental Study Area Handbook
1973 28 pages
A guide to the natural community at the ECO-Lab--the grasses, trees, animals, and birds which inhabit the area. Elementary and Secondary. Price $1.00

Grasses of Laramie County
1973 30 pages
An in-depth discussion of the grasses which survive the conditions of the county, both native and introduced.
Price $2.50

Field Guide for Trees and Shrubs, Wyoming State Capitol Grounds
1973 10 pages Price $1.00

ECO-LAB Environmental Resource Center Catalogue Guide
1974 57 pages
A listing of curriculum materials of general nature, dealing with environmental topics and problems of local, state, national and worldwide concern, which are available at the ECO-LAB Resource Center. Price $2.00

A Guide To Common Pond Organisms
May 1975 28 pages
This guide provides information to teachers and students about common pond organisms that are found locally. Glossary and reference materials are listed.
Not Available

Fall Catalog for Weeds and Seeds at the Eco-Lab
1974 40 pages
Brief descriptions and drawings of plants that are relevant along trails at the Eco-Lab during the fall. Also historical background of the use of the plants as food or medicine. Not Available

A Guide to Common Edible Plants in Wyoming
January 1976 74 pages
A guide to acquaint the interested individual with some of the wild edible plants that can be found in the State of Wyoming Price $3.00

The above materials may be ordered from:

Laramie County School District #1
Administration Building
2810 House Avenue
Cheyenne, WY 82001

2) Free materials available: None
3) Materials purchasable:
   See 1 above.
4) New instructional materials being developed: None
5) Materials anticipated for development: None
6) Commercial association: None

I. IMPLEMENTATION:

1) Schools using entire set of materials: 22
2) Teachers adopting all of the materials: Not indicated
3) Teachers using some of the materials: 200
4) Total students using all of the materials: 1,500
5) Totals stated are estimated.
6) Selected schools utilizing program materials:

Davis Elementary School
6009 Yellowstone Road
Cheyenne, WY 82001

Lebhard Elementary School
807 Coolidge Street
Cheyenne, WY 82001

Buffalo Ridge Elementary School
5331 Pineridge Avenue
Cheyenne, WY 82001

Pioneer Park Elementary School
1407 Cosgriff Court
Cheyenne, WY 82001

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: Yes
4) Kinds of preparation programs:
   Workshop (2-1/2 hours)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: Yes

K. MATERIALS EVALUATION:

1) Evaluator:
   Dr. Bob Eicker, University of Wyoming
2) Pertinent published research on evaluation: None
3) Unpublished research summary:
   ECO-Curriculum Development and Learning Laboratory, Final Evaluation Report

L. SUMMARY OF ACTIVITIES TO DATE:

The major goal of the "Eco-Curriculum Development and Learning Laboratory Project," Laramie County School District, Cheyenne, Wyoming, was to initiate the development of environmental curriculum materials for grades K-12. An Eco-Laboratory was developed as a center for project activities, an environmental center for the community, and as an indoor-outdoor learning center for students.

The curriculum development process was implemented through three teacher in-service programs for elementary, junior high and senior high teachers. Emphases were upon developing environmental knowledge and attitudes in teachers and upon the writing and tryout of curriculum activity units in classrooms. In-service teachers were pre and post evaluated for growth toward specific objectives.

Forty of 159 curriculum activities were tested for effectiveness. Thirty-eight of the 40 proved effective when statistical tests were applied to pre-post evaluation data. These and the remaining activities were included in four environmental activities booklets which were distributed to all schools in the district. Supplementary guides to grasses and flora of the area, as well as an environmental study area handbook were supplied to teachers for the planning of outdoor activities.

Management of the project was by objectives under an accountability model. Quarterly evaluation reports were made in accordance with the project time line. Effective management resulted in all but one major product of the project being attained. Processes were also accomplished as specified. In addition, management was able to develop programs not specified in the original proposal. Follow-up studies of material usage, summer programs at the Eco-Lab for students, mini-grants for student environmental projects, and a limited number of adult education workshops were among the added activities.

The Eco-Lab was visited extensively by lay citizens, teachers, service clubs, and school classroom groups. Guided tours were provided for visitors and as field experiences for classes. An Eco-Library and Environmental Education Resource Center with a classification and distribution system for the schools and community was included in the lab facility.

A community advisory committee functioned effectively in support of the project from its inception until the end of Title III funding period. Members represented local, state and federal government agencies, civic clubs, teachers and students of all school levels. The committee provided input, helped solve problems and secured financial, material and labor donations to the project and the Eco-Laboratory facility.

Due to the efforts of the project manager and the community advisory committee, the L.E.A. provided continued funding for the project beyond the Title III funding period. This was the major indication of the project effectiveness.

M. PLANS FOR THE FUTURE:

Outdoor recreation camp activities for elementary fifth and sixth grades.

N. REPORT SUBMITTED BY: Robert Larson
September 4, 1979

Previous Directory References: 1972, 1973, 1975

ERIC Documents:

ED 099 214	Environmental Activities, Junior High School
ED 099 215	Environmental Activities, Senior High School
ED 180 832	Elementary Environmental Activities

A. TITLE: GRAND TETON ENVIRONMENTAL EDUCATION CENTER/ L.I.F.E. (LEARNING IN FIELD ENVIRONMENT)

B. EXECUTIVE DIRECTOR: Kurt Rademacher
Box 68
Kelly, WY 83011
307/733-4765

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education

D. HEADQUARTERS: Same as B

E. PRINCIPAL STAFF: 5

CONSULTANT SERVICES UTILIZED:
Recently using Northern Rockies Action Group to instigate master planning

F. HISTORY:

1) Principal originators:
   Ted Major
2) Date and place of initiation:
   1967; Grand Teton National Park, Wyoming
3) Funding sources utilized:
   ESEA Title III (several years ago); tuition; private donation; foundation grants for lab facilities
4) Overall purpose:
   Environmental education and natural history education

G. OBJECTIVES:

Educating the public in all facets of the environment and how we are interdependent with it.

H. MATERIALS:

1) Materials produced:
   Primary (K-6)--assorted study sheets
   Secondary (7-12)--30-minute movie "Nature in Literature"
   Other--working on winter snow studies filmstrip
2) Free materials available: None
3) Materials purchasable: None
4) New instructional materials being developed: None
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION: Not applicable

K. MATERIALS EVALUATION: Not applicable

L. SUMMARY OF ACTIVITIES TO DATE:

The Teton Science School began in 1967 with the idea that a new conservation ethic was necessary if mankind were to survive the consequences of his technological pursuits. The continued exploitation of the earth's natural resources makes it essential that the school continue to pursue this goal.

The approach taken by the school is an academic one. The study of nature is emphasized using scientific discipline. Instruction deals with ecological relationships and the need for preservation of the natural resources that remain.

In 1974, a former guest ranch was converted into the Grand Teton Environmental Education Center. The Teton Science School, a private non-profit corporation, was contracted to operate it. Nestled in the foothills of the Gros Ventre mountains, the Center is on the east boundary of Grand Teton National Park.

The rustic log buildings of the old dude ranch serve as a meeting center, a natural history library, a laboratory, an herbarium, a dining area and dormitory space. The school provides cross-country ski equipment and showshoes as means of winter travel.

There are a wide variety of programs, varying in length from two days to six weeks, and including age groups ranging from fifth graders to adults. All programs are open to a maximum number of 25 students. The emphasis of each is on field study. The following is a general list of programs:

- Environmental Awareness
- Summer High School Field Biology
- Winter Field Studies
- Grand Teton Summer Seminars
- College Courses
- Teacher Workshops
- Tailor-made Programs

Teachers, school districts, institutions, as well as individuals are encouraged to make use of the school's programs.

M. PLANS FOR THE FUTURE: Not indicated

N. REPORT SUBMITTED BY: Kurt Rademacher
September 9, 1979

Previous Directory References: 1973, 1975

A. TITLE: PROJECT WEST (WESTERN ENVIRONMENTAL STUDIES FOR TOMORROW)

B. DIRECTOR: Dr. Duane Keown
College of Education
University of Wyoming
Laramie, WY 82071
307/766-6118

C. DESCRIPTORS: Conservation education, energy education, environmental education, natural resources, outdoor education, population education

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE: Yes

E. PRINCIPAL STAFF: 3

CONSULTANT SERVICES UTILIZED:
Our program is a field-oriented program when we lead the students to environmental problems or solutions where they meet on-site with environmental management specialists.

F. HISTORY:

1) Principal originators:
   Dr. Duane Keown
2) Date and place of initiation:
   June, 1976; pilot project with Laramie students
3) Funding sources utilized:
   University of Wyoming-pilot project
4) Overall purpose:
   To expose Wyoming teacher and student leaders (secondary level) to environmental management problems and procedures.

G. OBJECTIVES:

Project WEST will be a deliberate effort to educate a corps of young adult leaders and school teachers in concepts and techniques of environmental management, making it possible for them to pass on to other young adults, teachers and friends, an understanding of and a commitment to ecologically responsible lifestyles.

H. MATERIALS:

1) Materials produced:
   Field activities
2) Free materials available:
   Agenda of activities; brochure
3) Materials purchasable: None
4) New instructional materials being developed: Yes
   Secondary
5) Materials anticipated for development: None indicated
6) Commercial association: None

I. IMPLEMENTATION: Not indicated

J. TEACHER PREPARATION:

1) Consultative service available: Yes
2) In-service education program: Yes
3) Pre-service training program: No
4) Kinds of preparation programs:
   - Workshop
   - Summer Institute (1 week for selected Wyoming high schools)
5) Available pre-service and/or in-service teaching materials for educators to use in preparing teachers: Yes

K. MATERIALS EVALUATION: None

L. SUMMARY OF ACTIVITIES TO DATE:

Using students from within Laramie (grades 7-11) we have piloted the activities that will be the curriculum of Project WEST. These activities for our environmental explorations have been carried out in week-long sessions during each summer since 1976.

With the Environmental Education Act monies we will now recruit student-teacher teams (1 teacher/2 students) from Wyoming high schools and these teams from 16 high schools will participate in the encounters. The program will expand until in the third summer 48 schools will be participating.

M. PLANS FOR THE FUTURE: Yes

N. REPORT SUBMITTED BY: Duane Keown
September 19, 1979

A. TITLE: PLANTS LIKE AND NEED THE SUN

B. DIRECTOR: D. Lucille Reese
Powder River School
Box 76
Powder River, WY 82648
307/234-3939

C. DESCRIPTORS: Conservation education, energy education, natural resources

ADDITIONAL DESCRIPTORS: Solar-heated greenhouse

D. HEADQUARTERS: Same as B

SPECIAL FACILITIES OR ACTIVITIES FOR VISITORS TO SEE:
Solar heating system; greenhouse

E. PRINCIPAL STAFF: 1

CONSULTANT SERVICES UTILIZED: None indicated

F. HISTORY:

1) Principal originators:
   D. Lucille Reese in association with other teachers, students, parents and community members
2) Date and place of initiation:
   1973 (idea); 1973-1978 (study and research, obtain funds); 1978-1979 (building)
3) Funding sources utilized:
   ESEA Title IV-C, approximately $4,500; local funds, approximately $3,200--for materials and supplies; all labor was donated
4) Overall purpose:
   To provide learning experience in solar heating and plants for community and K-6 school children.

G. OBJECTIVES:

1) To provide environment for learning:
   a) fundamentals of greenhouse operation
   b) various aspects of solar energy
2) To provide space for:
   a) student plant projects
   b) community use (such as starting garden plants)
3) To provide education in:
   a) keeping project records
   b) career education
   c) business and economics
   d) sharing knowledge
4) To provide plants to observe and enjoy

H. MATERIALS:

1) Materials produced:
   Scrapbook record and pictures; slides
2) Free materials available:
   Brief summary of what we did
3) Materials purchasable: Not indicated
4) New instructional materials being developed: No
5) Materials anticipated for development: Not indicated
6) Commercial association: None

I. IMPLEMENTATION: Not applicable

J. TEACHER PREPARATION: Not applicable

K. MATERIALS EVALUATION: Not applicable

L. SUMMARY OF ACTIVITIES TO DATE:

There are many possible solar heating systems and many kinds of greenhouses. Ours is just one more variation.

Our greenhouse is about 13' x 32' and from 8' to 11' high. We placed it on the front of the school because of the south exposure and because there was little additional foundation necessary. Also, the existing school wall provided part of the building. Since this wall is brick, it provides additional heat storage. Heat is also provided when the furnace operates in the basement gym. On sunny days, excess greenhouse heat is drawn into the school hallway.

The cost of our project was about $7,000; however, all labor was donated. We received $4,478 from a Title IV-c grant and had local donations of some $2,800. (Contact Gayle R. Lain, Coordinator, Innovative Programs/Title IV-C, State Department of Education, Hathaway Building, Cheyenne, Wyoming 82001 for information about grant applications.)

A rough breakdown of costs is as follows:

Solar Collector and Storage Area	$1,700
Equipment Redwood benches, shelves, sink, humidifier, watering wand, shading louvers, etc.	1,500
Supplies Record books, plants, seeds, dirt, pots, chameleons, etc.	900
Building Materials and Supplies Redwood, fiberglass, nails, wiring, delivery, etc.	2,700
Film and processing	200
Total	$7,000

Our collector is made following the "North" design. Contact Mr. and Mrs. Bill North, 1120 South Chestnut, Casper, Wyoming 82601, if you are interested in a solar collector workshop. Their plans are in a booklet called "Solar Energy Workshop" available for $3 from the Solar Energy Association of Northeastern Colorado, 2025 5th Avenue, Greeley, Colorado 80631. Or, write to Charles Nations, 711 South 3rd, Lander, Wyoming, if you want a greenhouse workshop.

Our collector is 8' x 20'. It is made of corrugated aluminum painted black and covered by corrugated fiberglass. The sun heats the metal which heats the air in the insulated space behind the aluminum. Marrianne North calls this the Model T version of solar collectors, but it works. One advantage of this simple design is that if something should go wrong, we can fix it.

The hot air is drawn from the collector into a 6-ton 4' x 4' x 8' rock storage area located below the greenhouse. The storage box is made of penta-treated plywood, insulated to R30 and contains 1-1/2" rock. The insulation increases the box size by 10" each way. The automatic system is controlled by thermostats and includes back draft and motorized dampers.

The 350 cfm fan pulls air from the collector to the rock and returns it to the collector for reheating. This fan begins to operate when the air reaches 110° in the collector. It continues at all higher temperatures and until the temperature drops back to 90°. Our system puts air into and from the rocks from the top. This is not usual, but in our case it was more feasible. Hot air is usually piped into the bottom and the return air duct is at the top. Also, our system did add more cost in extensive use of expensive flex duct.

During sunny, though cold, winter days our collector started around 9:00-9:30 a.m. and would run until 3:30-4:00 p.m. Heat collected during the day and stored in the rock is used to heat the greenhouse at night. We found that the storage area retained some heat even after three cloudy days. We feel that we can increase the time the collector runs if we box it in--a project for this summer.

We are reversing the system for summer cooling. Our collector, which is in two sections, is adjustable. In summer we raise them to near vertical and open the heat ducts. We draw in cool night air to cool the rocks to use the next day to cool the greenhouse.

We built our greenhouse with redwood and fiberglass. We used .040" Sunlite Premium II for the walls and inner ceiling. (From Powers Products Company, Box 1187, Cheyenne, Wyoming 82001.) We bought the fiberglass in 4' x 50' rolls at a cost of 55¢ per square foot. It can be cut with tin snips. We have a clear tedlar-treated corrugated fiberglass roof. It is 50" wide and can be cut to your desired length. Our cost was 48¢ per square foot. With this double ceiling we have a near 6" dead air space which seemed to hold the heat as snow would not melt off the roof until the sun came out.

The roof is made with 2" x 6" boards every two feet. These were braced every three feet. The sides were made with 2" x 4" boards. The fiberglass was attached with a cushioned screw-type nail. This sturdy building easily withstood our occasional high winds.

Even in winter we sometimes get too much heat, so we are investing in some aluminum shading louvers to be installed soon. Shading can be done less expensively with materials such as burlap or with whitewashing, though with more work.

We have three 4' x 6' redwood benches; three two-shelf sections 1' x 7' each; and two two-shelf work benches 2' x 3' on either side of the 2' x 2' sink. We also have a 1' x 8' shelf above the work benches to hold reference books, record books and a scrapbook. We have one eight-shelf metal unit to use for seed flats.

Other equipment includes an automatic humidifier and a watering wand with hose.

We started with a good supply of various kinds of plants. The children each had a project which added many more kinds of flowers and vegetables. We anticipate more sophisticated experiments as the students and teachers learn more about plants. This year we learned how to read a seed packet directions, note the differences in seeds, how deep to plant each, how long it takes for the seeds to germinate, how often and how much to water, when and how to transplant, how to measure growth using cm's, how and what to record including how to make graphs, and finally to enjoy the flowers and eat the vegetables, noting that we were back to seeds again.

The children sometimes acted as guides for visitors and often explained how our solar system works. (We have had 150 plus visitors.)

Most of the time spent in the greenhouse for watering and care of plants was done before school and during play time. Class time was used for entries in record books.

During the winter we melted snow in the greenhouse in large plastic trash cans to use for watering.

We have a solar oven which we keep in the greenhouse in the winter. Children learned to make fruit leather and enjoyed telling visitors about that, too. I have also made jerky and have dried citrus fruit rinds. Charles Nations has the plans for an oven like ours.

The community gardeners start plants in April to transplant into their summer gardens. Future plans include the possibility of students planning and working a business venture.

If you have any other questions, do not hesitate to write to ask them. You are most welcome to visit almost anytime. If we are not here, Carolyn Perea or Gwen Upton could show it.

Published articles including pictures:

The Wyoming Educator (May, 1979)
R.E.A. News (May, 1979)
Grit (I'm Proud of My Town) (July 29, 1979)
In Wyoming (June-July, 1979)
Wyoming News (probably September, 1979)

M. PLANS FOR THE FUTURE:

Plant experiments; student business venture

N. REPORT SUBMITTED BY: D. Lucille Reese
August 31, 1979

APPENDICES

APPENDIX A: QUESTIONNAIRE SENT TO PROJECT/PROGRAM DIRECTORS

ERIC Clearinghouse for Science, Mathematics and Environmental Education

QUESTIONNAIRE ON ENVIRONMENTAL EDUCATION PROJECTS AND PROGRAMS

The items in this questionnaire have been devised so as to elicit as much information about your program, project, or efforts in environmental education as possible. It has been done this way intentionally, hoping that your response to it will cause you a minimum of inconvenience.

Information gathered from this questionnaire will be used in developing the fifth edition of the ERIC/SMEAC Directory of Projects and Programs in Environmental Education for Elementary and Secondary Schools.

Please respond to each of the following items as completely as possible. An immediate response will be appreciated.

A. **Project Title:**

What is the title of your project or program? Please spell out acronyms.

____

B. **Descriptors:**

Please check each descriptor from the list below which is pertinent to your project/program. Check as many as are appropriate. Add others as needed.

_____ Conservation Education

_____ Energy Education

_____ Environmental Education

_____ Marine Education

_____ Natural Resources

_____ Outdoor Education

_____ Population Education

_____ Urban Environmental Education

Other descriptors: ________________________________

____

C. **Project Director:**

Name ____

Business Address: Street ______________________________

City ______________ State ________ Zip ______

Telephone Number: Area Code ____ Number __________

D. **Project Headquarters**:

1. Where is the headquarters for your project:

Street____

City_______________________ State___________ Zip__________

Telephone Number: Area Code_____ Number____________________

2. Do you have special facilities or activities available for visitors to see?

______Yes ______No Describe:

E. **Principal Staff**:

1. How many persons are professionally involved as staff in your project? ______

2. Have you utilized consultant services in development and/or implementation of your project? If yes, please describe:

F. **Project History**:

1. Who were the principal originators of the project?

2. What was the approximate date and place of the initiaton of your project?

3. What funding sources have been involved in the development and implementation of the project?

4. What is the overall purpose of the project?

G. **Project Objectives**:

List the objectives of the project.

H. **Materials**:

1. List the materials (texts, guides, tests, films, etc.) that you have produced, according to grade level and/or use.

   a. Primary (K-6)

   b. Secondary (7-12)

   c. Other (please specify)

2. List any free materials that are available from your project.

3. List materials produced by your project/program that can be purchased and from whom they can be purchased. If prices are available, please include them:

4. Are you developing or producing any new instructional materials (texts, tapes, films, guides, etc.)?

   _______Yes _______No

   If yes, for what grade levels are these being intended?

5. List any additional materials you anticipate developing.

6. Are you now, or have you been, associated with a commercial firm for publishing and distributing your materials?

   _______Yes _______No

   If yes, please provide details.

I. Materials Implementation:

1. How many schools are now using your entire set of materials? _______

2. How many teachers have adopted all of your project materials? _______

3. How many teachers are using some of your materials? _______

4. What is the total number of students using all of your materials? _______

5. Are the totals stated in 1, 2, 3, and 4 estimated or definite?

__________ Estimated __________ Definite

6. List names and locations of four selected schools where the program materials are being used.

Name of School ______________________________

Address of School ______________________________

____

Name of School ______________________________

Address of School ______________________________

____

Name of School ______________________________

Address of School ______________________________

____

Name of School ______________________________

Address of School ______________________________

____

J. Teacher Preparation:

1. Do you have a consultative service available for teachers using your materials? _______ Yes _______ No

2. Do you have an in-service education program for teachers using your materials? _______ Yes _______ No

3. Do you have a pre-service training program for teachers who desire to use materials?_______Yes _______No

4. Indicate whether you have each of the following kinds of teacher preparation programs:

   Workshop _______Yes _______No

   If yes, please indicate length of time ____________________________

   Summer Institute _______Yes _______No

   If yes, please indicate length of time ____________________________

   Evening Classes _______Yes _______No

   If yes, please indicate length of time ____________________________

   Other (please describe and indicate length of time).

5. Do you have available pre-service and/or in-service teaching materials for educators to use in preparing teachers?

   _______Yes _______No

   If yes, list the materials available.

   Are these pre-service and/or in-service teaching materials commercially available? _______Yes _______No

   If yes, please indicate commercial firm.

K. Materials Evaluation:

1. Has the effectiveness of the materials been evaluated?

   _______Yes _______No

   If yes, please indicate by whom.

2. List pertinent published research that is a part of your evaluation.

3. If you have unpublished research, please include copies of the reports.

L. **Project Summary:**

Please summarize project activities to date. Be sure to include explanatory information relative to your responses above.

M. **Plans for the Future:**

1. Do you plan additional activities? ______Yes ______No
2. What will be the nature of these activities?

N. This questionnaire was completed by: Name____________________________

Position in project/program____

Date______________________, 1979

PLEASE RETURN COMPLETED QUESTIONNAIRE TO: Dr. John F. Disinger
ERIC/SMEAC
1200 Chambers Road, Rm. 310
Columbus, OH 43212

APPENDIX B: STATE COORDINATORS PROVIDING RECOMMENDATIONS FOR DIRECTORY ENTRIES

Ms. Donna Bentley
Environmental/Energy and Science
Education Specialist
State Department of Education
Basic Sciences Section
111 Coliseum Boulevard
Montgomery, Alabama 36109
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Mr. Raymond L. Coxe, Education Specialist
State Department of Education
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(907) 479-6362

Mr. Tillman E. Turley, Director
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1535 West Jefferson
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(602) 255-5785

Mrs. Helen Holmes, Coordinator
Economic and Environmental-Conservation Education
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Mr. Rudolph J.H. Schafer
Consultant in Environmental Education
State Department of Education
State Education Building
721 Capitol Mall
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(916) 322-4018

Mr. George A. Ek, Jr.
Consultant, Environmental Education
State Department of Education
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201 East Colfax
Denver, Colorado 80203
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Dr. Sigmund Abeles, Education Consultant
State Department of Education
P.O. Box 2219
Hartford, Connecticut 06115
(203) 566-4825

Mr. John C. Cairns, Supervisor
Science and Environmental Education
State Department of Public Instruction
John G. Townsend Building
Dover, Delaware 19901
(302) 678-4885

Mr. C. Richard Tillis, Director
Office of Environmental Education
Florida Department of Education
Tallahassee, Florida 32304
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Mr. Dallas W. Stewart, Science Coordinator
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207 Education Annex
156 Trinity Avenue, SW
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Ms. Judith Pool, Program Specialist
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State Department of Education
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Honolulu, Hawaii 96804
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Mrs. Karen Underwood, Consultant
Proficiency Testing and Energy
and Environmental Education
State Department of Education
Len B. Jordan Office Building
650 W. State
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(208) 384-2114

Mr. Don Roderick, Educational Consultant
Energy/Environmental Education
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Springfield, Illinois 62777
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PREVIOUS EDITIONS

Earlier editions of the Directory of Projects and Programs in Environmental Education were published in 1972, 1973, 1975, and 1976. All are available through ERIC Document Reproduction Service (EDRS) as indicated below, and thus may be located in ERIC microfiche collections. or obtained through EDRS. Copies of the Second and Fourth Editions are available from SMEAC Information Reference Center (SMEAC/IRC), also as indicated.

Addresses:

EDRS
P. O. Box 190
Arlington, VA 22210

SMEAC/IRC
1200 Chambers Road, 310
Columbus, OH 43212

ED 071 881 - A Directory of Projects and Programs in Environmental Education for Elementary and Secondary Schools. 1972, 530 pages. EDRS prices: microfiche $1.00, paper copy $33.32. Not available from SMEAC/IRC.

ED 086 558 - A Directory of Projects and Programs in Environmental Education for Elementary and Secondary Schools, 2nd Edition. 1973; 686 pages. EDRS prices: microfiche $1.34, paper copy $42.32. SMEAC/IRC printed copy price $9.50.

ED 114 259 - A Directory of Projects and Programs in Environmental Education, 3rd Edition. 1975; 409 pages. EDRS prices: microfiche $0.83, paper copy $25.82. Not available from SMEAC/IRC.

ED 135 669 - A Directory of Projects and Programs in Environmental Education, 4th edition. EDRS microfiche price $0.83. Paper copy not available from EDRS. SMEAC/IRC printed copy price $6.50.